J O I N T
P U B L I C N O T I C E

CHARLESTON DISTRICT, CORPS OF ENGINEERS
69A Hagood Avenue
Charleston, South Carolina 29403-5107
and
THE S.C. DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL
Water Quality Certification and Wetlands Section
2600 Bull Street
Columbia, South Carolina 29201

REGULATORY DIVISION
Refer to: P/N SAC-2016-01368 March 13, 2018

Pursuant to Section 10 of the Rivers and Harbors Act of 1899 (33 U.S.C. 403) and Sections 401 and 404 of the Clean Water Act (33 U.S.C. 1341), an application has been submitted to the Department of the Army and the S.C. Department of Health and Environmental Control by

MR. CHRIS BECKHAM
SCDOT
955 PARK STREET
COLUMBIA, SOUTH CAROLINA 29202

for a permit to place fill material in waters of the U.S., including wetlands, to act as a suitable road base to construct a road, including two bridges, on new alignment, to connect the existing terminus of Andrews Bypass to the south to U.S. 521 to the north, in wetlands and other waters of the U.S in and adjacent to

JOHNSONS SWAMP AND MURRAY SWAMP

at the current terminus of Andrews Bypass at SC 41, towards the north-northwest to U.S. 521, north of the Town of Andrews, in Williamsburg County, South Carolina (Start: Latitude: 33.442818 °N, Longitude: -79.586455°W); (End: Latitude: 33.490615 °N, Longitude: -79.608780°W), as shown on the Andrews, South Carolina quadrangle map.

In order to give all interested parties an opportunity to express their views

N O T I C E

is hereby given that written statements regarding the proposed work will be received by the **Corps** and **SCDHEC** until

30 Days from the Date of this Notice

from those interested in the activity and whose interests may be affected by the proposed work.

The SCDOT proposes to construct Phase II of the U.S. 521 Andrews Bypass with a road on new alignment from the existing terminus of Andrews Bypass at U.S. 41 to U.S. 521 north of the Town of Andrews. The new road will be approximately 3.7-miles long and consist of four 12-foot wide travel lanes, two in each direction, a 48-foot wide grassed median, two 2-foot wide paved inside shoulders, two 4-foot wide paved outside shoulders, necessary turn lanes, and 155-foot long dual

bridges over Murray Swamp and 450-foot long dual bridges over Johnsons Swamp. Intersection improvements will be done at the tie in at U.S. 521, Haseldon Road, Wedgeworth Drive, Seaboard Road (S-16), and SC 41. The proposed project will have permanent fill impacts to 13.206-acres of wetlands, permanent clearing impacts to 1.153-acres of wetlands, temporary fill impacts to 0.328-acre of wetlands for construction access, and temporary clearing impacts to 3.729-acres of wetlands for access and erosion and sedimentation control, for a total impact of 18.412-acres of wetlands.

Purpose and Need: As stated by the applicant: "Extension of U.S. 521 Andrews Bypass is to improve system connectivity by creating an efficient traffic link from U.S. 521 (Andrews Bypass) south of Andrews to U.S. 521 north of Andrews."

Avoidance and Minimization: As stated by the applicant: "The preferred alternative minimizes impacts to wetlands to the maximum extent practicable. Final designs utilize 2:1 fill slopes in wetland areas to minimize impacts. The proposed project will tie into existing ditches or existing shoulders at the project terminus with existing U.S. 521 Andrews Bypass, avoiding impacts to Wetlands WP and WZ. The implementing of erosion control measures, which may include seeding of slopes, hay bale emplacement, silt fences, and sediment basins as appropriate, will also minimize impact on adjacent wetlands. Final designs include a complete span of Murray Swamp, therefore avoiding all impacts to the stream channel. Temporary impacts will be required for bridge construction over Johnsons Swamp, however no permanent impacts are anticipated. Final designs also reduced the vertical profile of the proposed roadway to the maximum extent possible while still meeting hydraulic requirements, therefore minimizing the volume of fill required for the causeway. Additionally, 2:1 slopes and guardrail were incorporated to minimize the footprint of the causeway within the floodplain and associated wetlands. Reclamation of wetland areas temporarily lost through construction activities will involve returning disturbed areas to their original elevations to the extent possible, allowing for adjacent vegetation to naturally reclaim the area."

Compensatory Mitigation: The applicant has proposed to mitigate for all unavoidable project impacts to jurisdictional waters of the U.S., including wetlands, by purchasing 216.2 wetland mitigation credits from Carter Stilley Mitigation Bank.

NOTE: This public notice and associated plans are available on the Corps' website at: http://www.sac.usace.army.mil/Missions/Regulatory/PublicNotices.

The District Engineer has concluded that the discharges associated with this project, both direct and indirect, should be reviewed by the S.C. Department of Health and Environmental Control in accordance with provisions of Section 401 of the Clean Water Act. As such, this notice constitutes a request, on behalf of the applicant, for certification that this project will comply with applicable effluent limitations and water quality standards. This activity may also require evaluation for compliance with the S.C. Construction in Navigable Waters Permit Program. State review, permitting and certification is conducted by the S.C. Department of Health and Environmental Control. The District Engineer will not process this application to a conclusion until such certifications are received. The applicant is hereby advised that supplemental information may be required by the State to facilitate the review.

This notice initiates the Essential Fish Habitat (EFH) consultation requirements of the Magnuson-Stevens Fishery Conservation and Management Act. Implementation of the proposed project would impact no estuarine substrates or emergent wetlands utilized by various life stages of species comprising the shrimp, and snapper-grouper management complexes.

The District Engineer's initial determination is that the proposed action would not have a substantial individual or cumulative adverse impact on EFH or fisheries managed by the South Atlantic Fishery Management Council and the National Marine Fisheries Service (NMFS). The District Engineer's final determination relative to project impacts and the need for mitigation measures is subject to review by and coordination with the NMFS.

Pursuant to Section 7 of the Endangered Species Act of 1973 (as amended), the Corps has reviewed the project area, examined all information provided by the applicant, and the District Engineer has determined, based on the most recently available information that the proposed project will have **no effect** on the Atlantic sturgeon (*Acipenser oxyrinchus*) or shortnose sturgeon (*Acipenser brevirostrum*), and will not result in the destruction or adverse modification of designated or proposed critical habitat. However, the Corps has determined that the proposed project **may affect, but is not likely to adversely affect**, the red-cockaded woodpecker (*Picoides borealis*), American wood stork (*Mycteria Americana*), American chaffseed (*Schwalbea Americana*), and Canby's dropwort (*Oxypolis canbyi*). Per the applicants' prior coordination, dated July 7, 2015, the U.S. Fish and Wildlife Service (USFWS) concurred with this finding. As such, this public notice serves as a request for any additional information regarding listed species and the proposed project from the USFWS and/or NMFS.

Pursuant to Section 106 of the National Historic Preservation Act (NHPA), this public notice also constitutes a request to Indian Tribes to notify the District Engineer of any historic properties of religious and cultural significance to them that may be affected by the proposed undertaking.

In accordance with the Programmatic Agreement among the Federal Highway Administration (FHWA), the U.S. Army Corps of Engineers, Charleston District (Corps), the South Carolina Department of Transportation (SC DOT), the South Carolina State Historic Preservation Officer (SHPO) and the Advisory Council on Historic Preservation (ACHP) regarding Section 106 implementation for Federal-Aid Transportation Projects in the State of South Carolina, FHWA is the Lead Federal Agency for this undertaking. FHWA has determined that historic properties will be adversely affected by this undertaking. In order to take into account the effects of this undertaking a Memorandum of Agreement (MOA) has been prepared and executed between FHWA, SCDOT, SHPO, and CIN-THPO. This public notice serves to notify the SHPO that the Corps is aware of the presence of this historic property, the executed MOA, and the stipulations included in the MOA to mitigate the project's effect. To ensure that other historic properties that the District Engineer is not aware of are not overlooked, this public notice also serves as a request to the State Historic Preservation Officer, Tribal Historic Preservation Officers (THPO) and other interested parties to provide any additional information they may have with regard to historic properties.

The District Engineer's final eligibility and effect determination will be based upon coordination with the SHPO and/or THPO, as appropriate and required and with full consideration given to the proposed undertaking's potential direct and indirect effects on historic properties within the Corps-identified permit area.

Any person may request, in writing, within the comment period specified in this notice, that a public hearing be held to consider this application. Requests for a public hearing shall state, with particularity, the reasons for holding a public hearing.

The decision whether to issue a permit will be based on an evaluation of the probable impact including cumulative impacts of the activity on the public interest and will include application of the

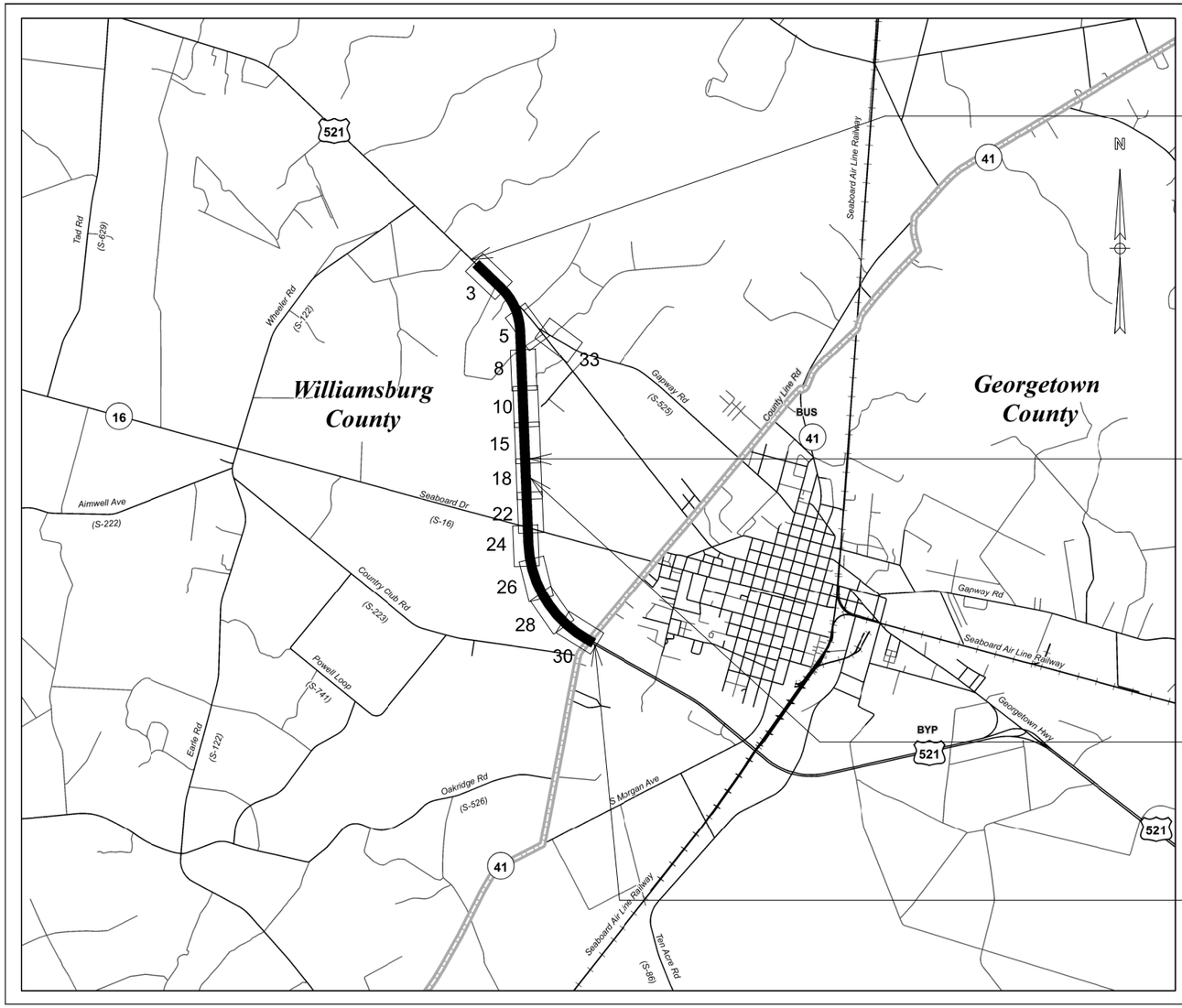
guidelines promulgated by the Administrator, Environmental Protection Agency (EPA), under authority of Section 404(b) of the Clean Water Act. That decision will reflect the national concern for both protection and utilization of important resources. The benefit which reasonably may be expected to accrue from the project must be balanced against its reasonably foreseeable detriments. All factors which may be relevant to the project will be considered including the cumulative effects thereof; among those are conservation, economics, aesthetics, general environmental concerns, wetlands, historic properties, fish and wildlife values, flood hazards, flood plain values, land use, navigation, shoreline erosion and accretion, recreation, water supply and conservation, water quality, energy needs, safety, food and fiber production and, in general, the needs and welfare of the people. A permit will be granted unless the District Engineer determines that it would be contrary to the public interest. In cases of conflicting property rights, the Corps cannot undertake to adjudicate rival claims.

The Corps is soliciting comments from the public; Federal, state, and local agencies and officials; Indian Tribes; and other interested parties in order to consider and evaluate the impacts of this activity. Any comments received will be considered by the Corps to determine whether to issue, modify, condition, or deny a permit for this project. To make this decision, comments are used to assess impacts on endangered species, historic properties, water quality, general environmental effects, and the other public interest factors listed above. Comments are used in the preparation of an Environmental Assessment and/or an Environmental Impact Statement pursuant to the National Environmental Policy Act. Comments are also used to determine the need for a public hearing and to determine the overall public interest of the activity. **Please submit comments in writing, identifying the project of interest by public notice number, to the following address:**

U.S. Army Corps of Engineers
ATTN: Regulatory Division
69-A Hagood Avenue
Charleston, South Carolina 29403-5107

If there are any questions concerning this public notice, please contact Christopher Mims, at (843) 329-8044, or via email at Christopher.D.Mims@usace.army.mil.

FED. ROAD DIV. NO.	STATE	COUNTY	PROJECT ID	ROUTE NO.	SHEET NO.	TOTAL SHEETS
3	SC	GEORGETOWN / WILLIAMSBURG	0034125	US 521	1	36



BEGIN PROJECT
STA. 2642+50.00
SEE SHEET NO.6

DUAL 155.0 L.F. BRIDGE
TO BE CONSTRUCTED
STA. 2737+80.00 TO
STA. 2739+35.00

DUAL 450.0 L.F. BRIDGE
TO BE CONSTRUCTED
STA. 2744+30.00 TO
STA. 2748+80.00

END PROJECT
STA. 2827+00.00
SEE SHEET NO.17

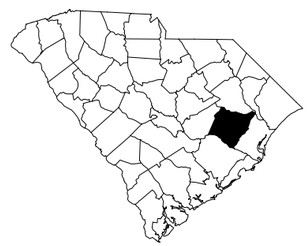
WILLIAMSBURG AND GEORGETOWN COUNTIES

LAYOUT

SCALE: NTS

PROJECT IMPACTS

Permanent Wetland Cut/Fill Impact	13.206 acre
Permanent Wetland Clearing Impact	1.153 acre
Temporary Wetland Fill Impact	0.328 acre
Temporary Wetland Clearing Impact	3.729 acre
Total Wetland Impacts	18.416 acre



MAP SHOWING LOCATION OF
WILLIAMSBURG COUNTY IN SOUTH CAROLINA

LEGEND

Proposed Improvement Area

SOUTH CAROLINA ENGINEERS AND CONSULTANTS, INC. No. C00957 CERTIFICATE OF AUTHORIZATION

CALYX ENGINEERS + CONSULTANTS
7500 EAST INDEPENDENCE BOULEVARD, SUITE 100
CHARLOTTE, NC 28227
phone: 704.537.7300
CALYXengineers.com

REV. NO.	BY	DATE	DESCRIPTION OF REVISION
4			
3			
2			
1	TLR	2-14-2018	ADDRESSED COMMENTS BY USAC OF ENGINEERS

TOPO.	DATE	
DWG.	DATE	SQUAD -
R/W	DATE	

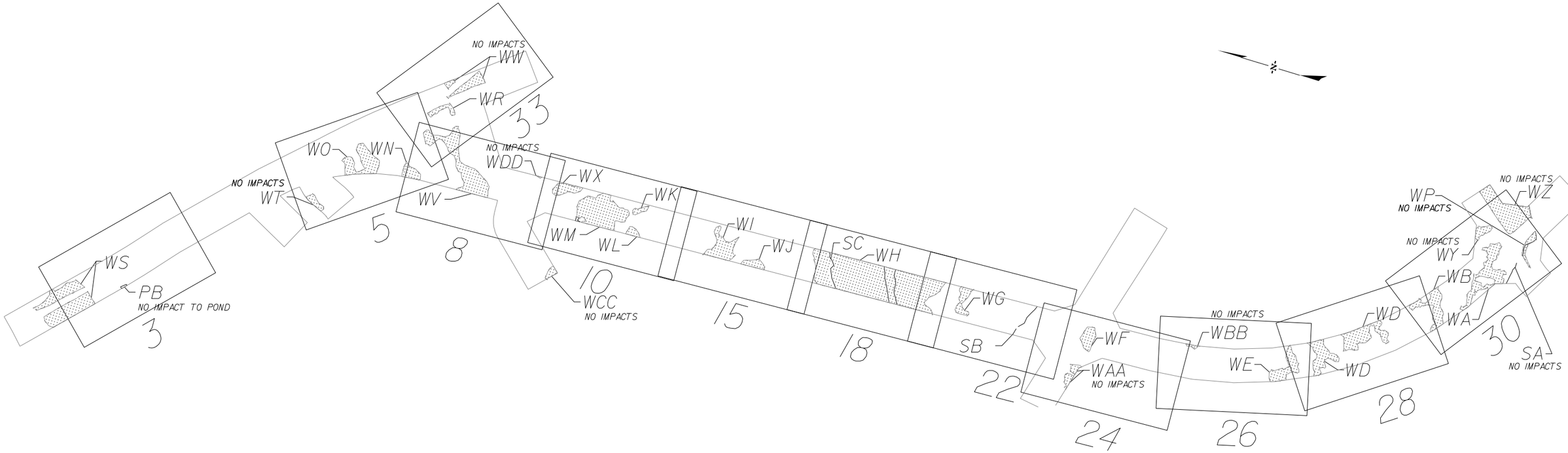
SOUTH CAROLINA
DEPARTMENT OF TRANSPORTATION
COLUMBIA, S.C.

US 521 (ANDREWS BYPASS)
PLAN
DA No.: SAC-2016-01368

RTE. US 521 DWG. NO.

3/9/2018
3:13:54 PM
R:\Hydraulics\Permits\Andrews_Permit PSH 1 Vicinity Map.dgn

FED. ROAD DIV. NO.	STATE	COUNTY	PROJECT ID	ROUTE NO.	SHEET NO.	TOTAL SHEETS
3	SC	GEORGETOWN / WILLIAMSBURG	0034125	US 521	2	36



NTS

LEGEND

Freshwater Wetland

Stream

SOUTH CAROLINA ENGINEERS AND CONSULTANTS, INC. No. C00957 CERTIFICATE OF AUTHORIZATION

CALYX ENGINEERS + CONSULTANTS

7500 EAST INDEPENDENCE BOULEVARD, SUITE 100
CHARLOTTE, NC 28227
phone: 704.537.7300
CALYXengineers.com

REV.NO.	BY	DATE	DESCRIPTION OF REVISION
4			
3			
2			
1	TLR	2-14-2018	ADDRESSED COMMENTS BY USAC OF ENGINEERS

TOPO. DATE
DWG. DATE
R/W DATE

SQUAD -

SOUTH CAROLINA
DEPARTMENT OF TRANSPORTATION
COLUMBIA, S.C.

US 521 (ANDREWS BYPASS) PLAN
DA No.: SAC-2016-01368

RTE. US 521 DWG. NO.

3/9/2018
3:15:50 PM
R:\Hydraulics\Permits\Andrews_Permit PSH 2.dgn

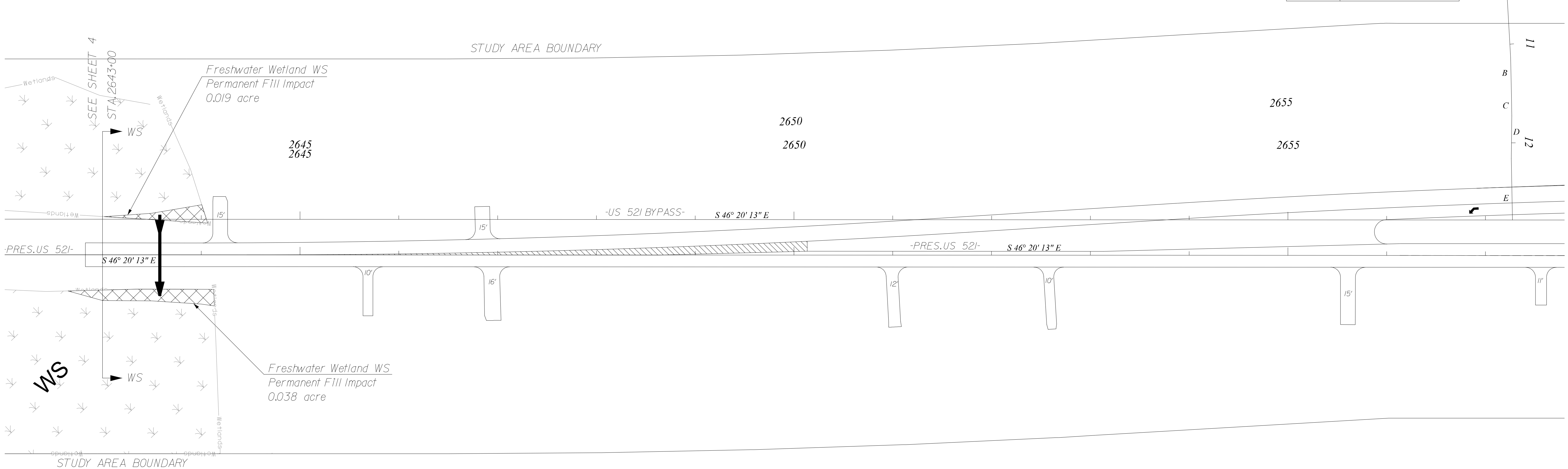
FED. ROAD DIV. NO.	STATE	COUNTY	PROJECT ID	ROUTE NO.	SHEET NO.	TOTAL SHEETS
3	SC	GEORGETOWN / WILLIAMSBURG	0034125	US 521	3	36

PROJECT IMPACTS

Permanent Wetland Cut/Fill Impact	0.057 acre
Permanent Wetland Clearing Impact	0.000 acre
Total Wetland Impacts	0.057 acre

OUTFALL DITCH 1

OUTFALL DITCH 1 LINE TABLE	
A	N 40° 21' 22" E
B	N 42° 29' 34" E
C	N 42° 42' 27" E
D	N 44° 09' 38" E
E	N 42° 34' 22" E



200 100 0 200

SCALE: 1" = 100'

LEGEND

Freshwater Wetland	
Permanent Cut/Fill Impacts	
Permanent Clearing Impacts	
Temporary Clearing Impacts	

SOUTH CAROLINA CERTIFICATE OF AUTHORIZATION
CALYX ENGINEERS AND CONSULTANTS, INC.
No. C00957

CALYX ENGINEERS + CONSULTANTS
7500 EAST INDEPENDENCE BOULEVARD, SUITE 100
CHARLOTTE, NC 28227
phone: 704.537.7300
CALYXengineers.com

REV. NO.	BY	DATE	DESCRIPTION OF REVISION
4			
3			
2			
1	TLR	2-14-2018	ADDRESSED COMMENTS BY USAC OF ENGINEERS

TOPO. DATE
DWG. DATE
R/W DATE
SQUAD -

SOUTH CAROLINA
DEPARTMENT OF TRANSPORTATION
COLUMBIA, S.C.

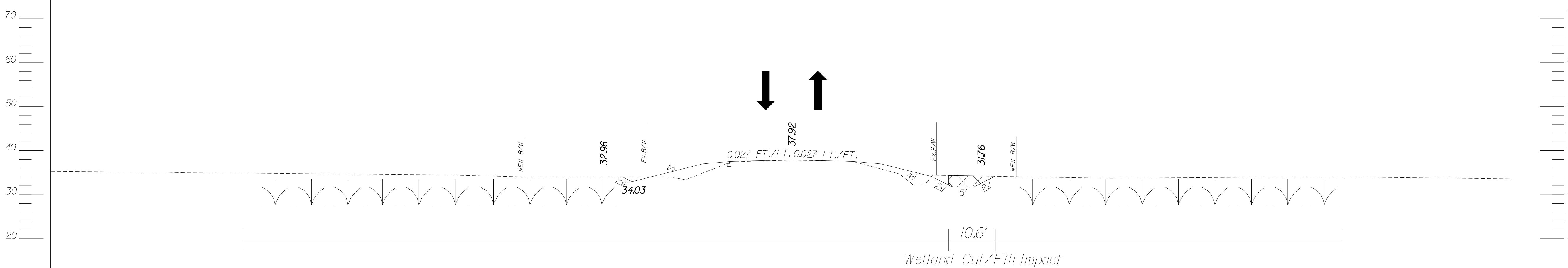
US 521 (ANDREWS BYPASS)
PLAN
DA No.: SAC-2016-01368

RTE. US 521 DWG. NO.

$$$$$$SYSTIME$$$$$
$$$$USERNAME$$$$
$$$$$$$$$$$$$$$DGN$$$$$$$$$$$$$$$$

FED. ROAD DIV. NO.	STATE	COUNTY	PROJECT ID	ROUTE NO.	SHEET NO.	TOTAL SHEETS
3	SC	GEORGETOWN / WILLIAMSBURG	0034125	US 521	4	36

US 521(ANDREWS BYPASS)
SECTION WS
STATION 2643+00



50 25 0 50

SCALE: 1" = 25'

LEGEND

Freshwater Wetland

Permanent Cut/Fill Impacts

SOUTH CAROLINA CERTIFICATE OF AUTHORIZATION CALYX ENGINEERS AND CONSULTANTS, INC. No. C00957

CALYX ENGINEERS + CONSULTANTS
7500 EAST INDEPENDENCE
BOULEVARD, SUITE 100
CHARLOTTE, NC 28227
phone: 704.537.7300
CALYXengineers.com

REV. NO.	BY	DATE	DESCRIPTION OF REVISION
4			
3			
2			
1	TLR	2-14-2018	ADDRESSED COMMENTS BY USAC OF ENGINEERS

TOPO. DATE
DWG. DATE
R/W DATE
SQUAD -

SOUTH CAROLINA
DEPARTMENT OF TRANSPORTATION
COLUMBIA, S.C.

US 521 (ANDREWS BYPASS)
PLAN
DA No.: SAC-2016-01368

RTE. US 521 DWG. NO.

$$$$$$SYSTIME$$$$$
$$$$USERNAME$$$$
$$$$$$$$$$$$$$$DGN$$$$$$$$$$$$$$$$$

FED. ROAD DIV. NO.	STATE	COUNTY	PROJECT ID	ROUTE NO.	SHEET NO.	TOTAL SHEETS
3	SC	GEORGETOWN / WILLIAMSBURG	0034125	US 521	5	36

PROJECT IMPACTS

Permanent Wetland Cut/Fill Impact	1.073 acre
Permanent Wetland Clearing Impact	0.000 acre
Total Wetland Impacts	1.073 acre

EQUATION:
POT STA 2673+65.99 BK =
PC STA 7+13.34 AH

STUDY AREA BOUNDARY

-PRES.US 521-

-US 521A RELOC.-

-US 521 RELOC.-

-US 521 BYPASS-

WEDGEWORTH DR.

RELOC. PT=19+22.81

RELOC. PC=11+92.55

PT=11+36.69

PC=10+09.27

POT=10+00.00

N 46° 20' 13" E

N 45° 46' 06" E

S 6° 31' 23" W

N 80° 36' 14" E

S 32° 13' 17" E

PT=2688+23.57

SEE SHEET 6
STA.2681+00

SEE SHEET 7
STA.2686+50

Impacts to Wetland WV
Shown on Sheet 8

Freshwater Wetland WO
Permanent Fill Impact
0.262 acre

Freshwater Wetland WO
Permanent Fill Impact
0.700 acre

Freshwater Wetland WN
Permanent Fill Impact
0.111 acre

No Impacts to
Wetland WT

OUTFALL DITCH 3 LINE TABLE	
A	N 49° 26' 04" E
B	N 48° 44' 54" E
C	N 48° 54' 42" E

OUTFALL DITCH 3

200 100 0 200

SCALE: 1" = 100'

LEGEND
- Freshwater Wetland
- Permanent Cut/Fill Impacts
- Permanent Clearing Impacts
- Temporary Clearing Impacts

SOUTH CAROLINA CERTIFICATE OF AUTHORIZATION
CALYX ENGINEERS AND CONSULTANTS, INC.
No. C00957

CALYX ENGINEERS + CONSULTANTS
7500 EAST INDEPENDENCE BOULEVARD, SUITE 100
CHARLOTTE, NC 28227
phone: 704.537.7300
CALYXengineers.com

REV.NO.	BY	DATE	DESCRIPTION OF REVISION
4			
3			
2			
1	TLR	2-14-2018	ADDRESSED COMMENTS BY USAC OF ENGINEERS

TOPO. DATE
DWG. DATE
R/W DATE
SQUAD -

SOUTH CAROLINA
DEPARTMENT OF TRANSPORTATION
COLUMBIA, S.C.

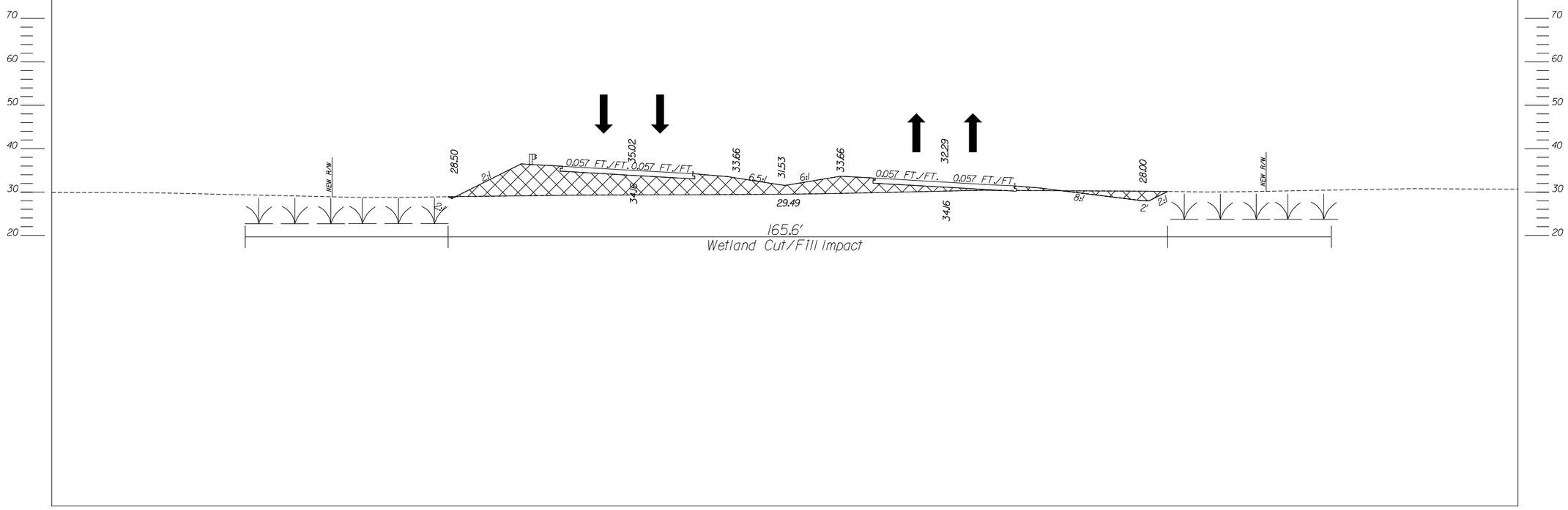
US 521 (ANDREWS BYPASS)
PLAN
DA No.: SAC-2016-01368

RTE. US 521 DWG. NO.

$$$$$$$SYSTIME$$$$$
$$$$USERNAME$$$$
$$$$$$$$$$$$$$$$$$$$DGNS$$$$$$$$$$$$$$$$$$$$

FED. ROAD DIV. NO.	STATE	COUNTY	PROJECT ID	ROUTE NO.	SHEET NO.	TOTAL SHEETS
3	SC	GEORGETOWN / WILLIAMSBURG	0034125	US 521	6	36

US 521 (ANDREWS BYPASS)
SECTION WO
STATION 2681+00



50 25 0 50

SCALE: 1" = 25'

LEGEND

Freshwater Wetland

Permanent Cut/Fill Impacts

SOUTH CAROLINA CERTIFICATE OF AUTHORIZATION — CALYX ENGINEERS AND CONSULTANTS, INC. No. C00957

CALYX ENGINEERS + CONSULTANTS
7500 EAST INDEPENDENCE BOULEVARD, SUITE 100
CHARLOTTE, NC 28227
phone: 704.537.7300
CALYXengineers.com

REV. NO.	BY	DATE	DESCRIPTION OF REVISION
4			
3			
2			
1	TLR	2-14-2018	ADDRESSED COMMENTS BY USAC OF ENGINEERS

TOPO. DATE
DWG. DATE SQUAD -
R/W DATE

SOUTH CAROLINA
DEPARTMENT OF TRANSPORTATION
COLUMBIA, S.C.

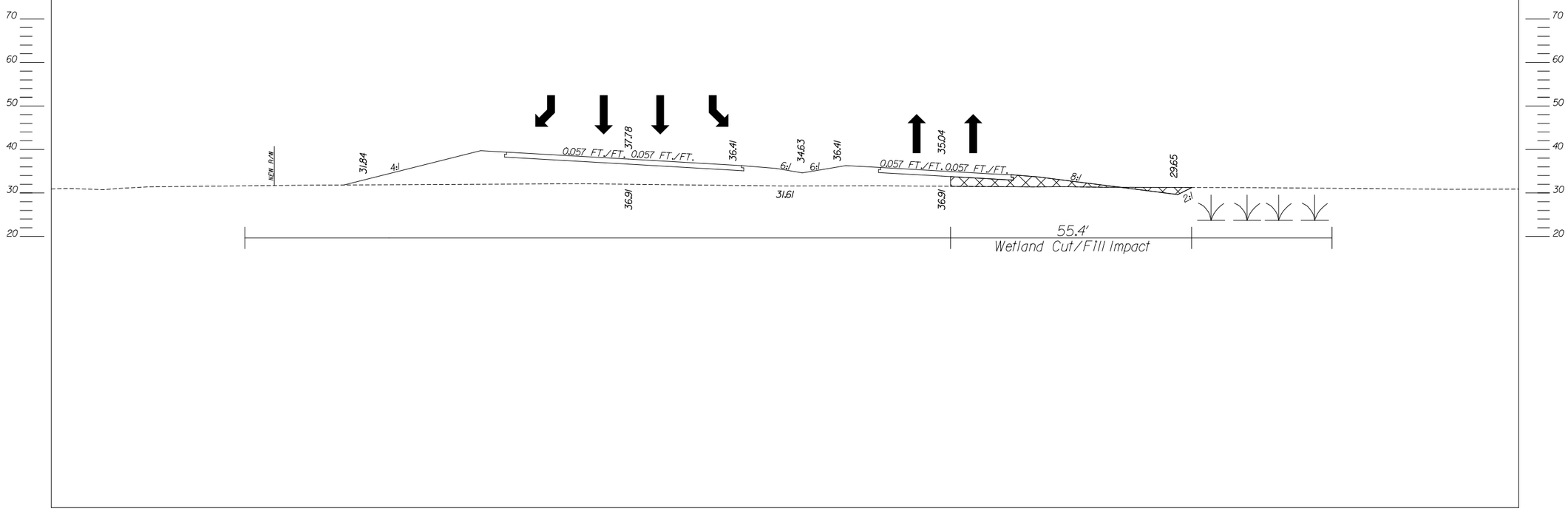
US 521 (ANDREWS BYPASS)
PLAN
DA No.: SAC-2016-01368

RTE. US 521 DWG. NO.

$$$$$$SYSTIME$$$$$
$$$$USERNAME$$$$
$$$$$$$$$$$$$$$$DGNS$$$$$$$$$$$$$$$$$$$$

FED. ROAD DIV. NO.	STATE	COUNTY	PROJECT ID	ROUTE NO.	SHEET NO.	TOTAL SHEETS
3	SC	GEORGETOWN / WILLIAMSBURG	0034125	US 521	7	36

US 521 (ANDREWS BYPASS)
SECTION WN
STATION 2686+50



50 25 0 50

SCALE: 1" = 25'

LEGEND

Freshwater Wetland

Permanent Cut/Fill Impacts

SOUTH CAROLINA ENGINEERS AND CONSULTANTS, INC. No. C00957 CERTIFICATE OF AUTHORIZATION

CALYX ENGINEERS + CONSULTANTS

7500 EAST INDEPENDENCE BOULEVARD, SUITE 100
CHARLOTTE, NC 28227
phone: 704.537.7300
CALYXengineers.com

REV. NO.	BY	DATE	DESCRIPTION OF REVISION
4			
3			
2			
1	TLR	2-14-2018	ADDRESSED COMMENTS BY USAC OF ENGINEERS

TOPO. DATE
DWG. DATE
R/W DATE

SQUAD -

SOUTH CAROLINA
DEPARTMENT OF TRANSPORTATION
COLUMBIA, S.C.

US 521 (ANDREWS BYPASS)
PLAN
DA No.: SAC-2016-01368

RTE. US 521 DWG. NO.

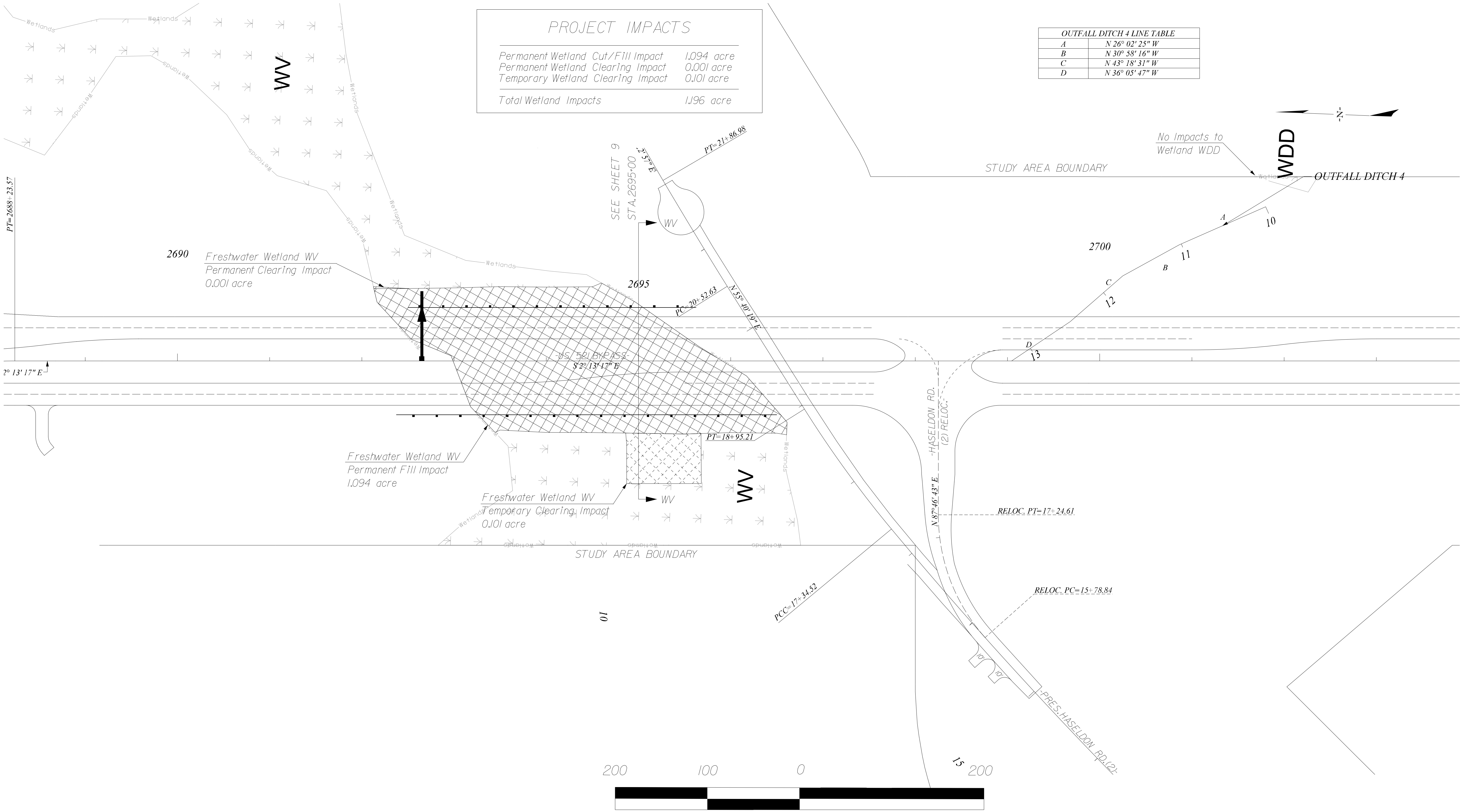
$$$$$$$SYSTIME$$$$$
$$$$$USERNAME$$$$$
$$$$$$$$$$$$$$$$DGN$$$$$$$$$$$$$$$$$$$$

FED. ROAD DIV. NO.	STATE	COUNTY	PROJECT ID	ROUTE NO.	SHEET NO.	TOTAL SHEETS
3	SC	GEORGETOWN / WILLIAMSBURG	0034125	US 521	8	36

PROJECT IMPACTS

Permanent Wetland Cut/Fill Impact	1.094 acre
Permanent Wetland Clearing Impact	0.001 acre
Temporary Wetland Clearing Impact	0.101 acre
Total Wetland Impacts	1.196 acre

OUTFALL DITCH 4 LINE TABLE	
A	N 26° 02' 25" W
B	N 30° 58' 16" W
C	N 43° 18' 31" W
D	N 36° 05' 47" W



SCALE: 1" = 100'

LEGEND

- Freshwater Wetland
- Permanent Cut/Fill Impacts
- Permanent Clearing Impacts
- Temporary Clearing Impacts

SOUTH CAROLINA CALYX ENGINEERS AND CONSULTANTS, INC. No. C00957 CERTIFICATE OF AUTHORIZATION

CALYX ENGINEERS + CONSULTANTS
7500 EAST INDEPENDENCE BOULEVARD, SUITE 100
CHARLOTTE, NC 28227
phone: 704.537.7300
CALYXengineers.com

REV. NO.	BY	DATE	DESCRIPTION OF REVISION
4			
3			
2			
1	TLR	2-14-2018	ADDRESSED COMMENTS BY USAC OF ENGINEERS

TOPO. DATE
DWG. DATE
R/W DATE
SQUAD -

SOUTH CAROLINA
DEPARTMENT OF TRANSPORTATION
COLUMBIA, S.C.

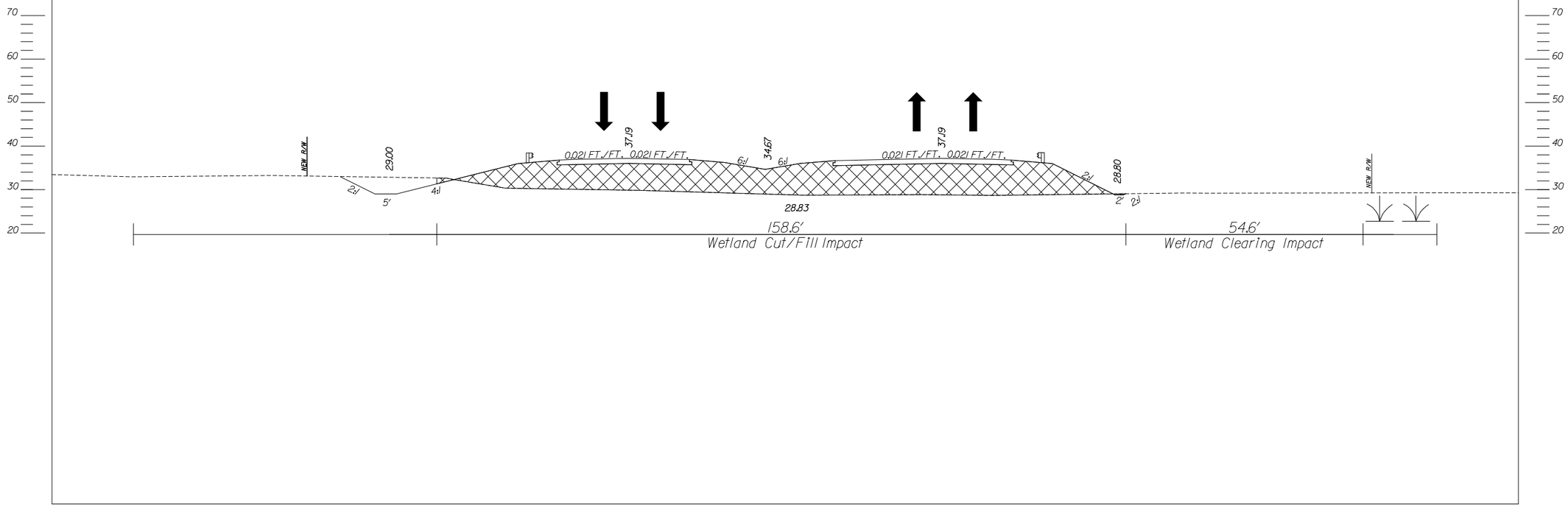
US 521 (ANDREWS BYPASS) PLAN DA No.: SAC-2016-01368

RTE. US 521 DWG. NO.

$$$$$$SYSTIME$$$$$
$$$$USERNAME$$$$$
$$$$$$$$$$$$$$$DGN$$$$$$$$$$$$$$$$$$$$

FED. ROAD DIV. NO.	STATE	COUNTY	PROJECT ID	ROUTE NO.	SHEET NO.	TOTAL SHEETS
3	SC	GEORGETOWN / WILLIAMSBURG	0034125	US 521	9	36

US 521 (ANDREWS BYPASS)
SECTION WV
STATION 2695+00



50 25 0 50

SCALE: 1" = 25'

LEGEND

Freshwater Wetland

Permanent Cut/Fill Impacts

SOUTH CAROLINA ENGINEERS AND CONSULTANTS, INC. No. C00957 CERTIFICATE OF AUTHORIZATION

CALYX ENGINEERS + CONSULTANTS

7500 EAST INDEPENDENCE BOULEVARD, SUITE 100
CHARLOTTE, NC 28227
phone: 704.537.7300
CALYXengineers.com

REV. NO.	BY	DATE	DESCRIPTION OF REVISION
4			
3			
2			
1	TLR	2-14-2018	ADDRESSED COMMENTS BY USAC OF ENGINEERS

TOPO.	DATE	SQUAD	-
DWG.	DATE		
R/W	DATE		

SOUTH CAROLINA
DEPARTMENT OF TRANSPORTATION
COLUMBIA, S.C.

US 521 (ANDREWS BYPASS)
PLAN
DA No.: SAC-2016-01368

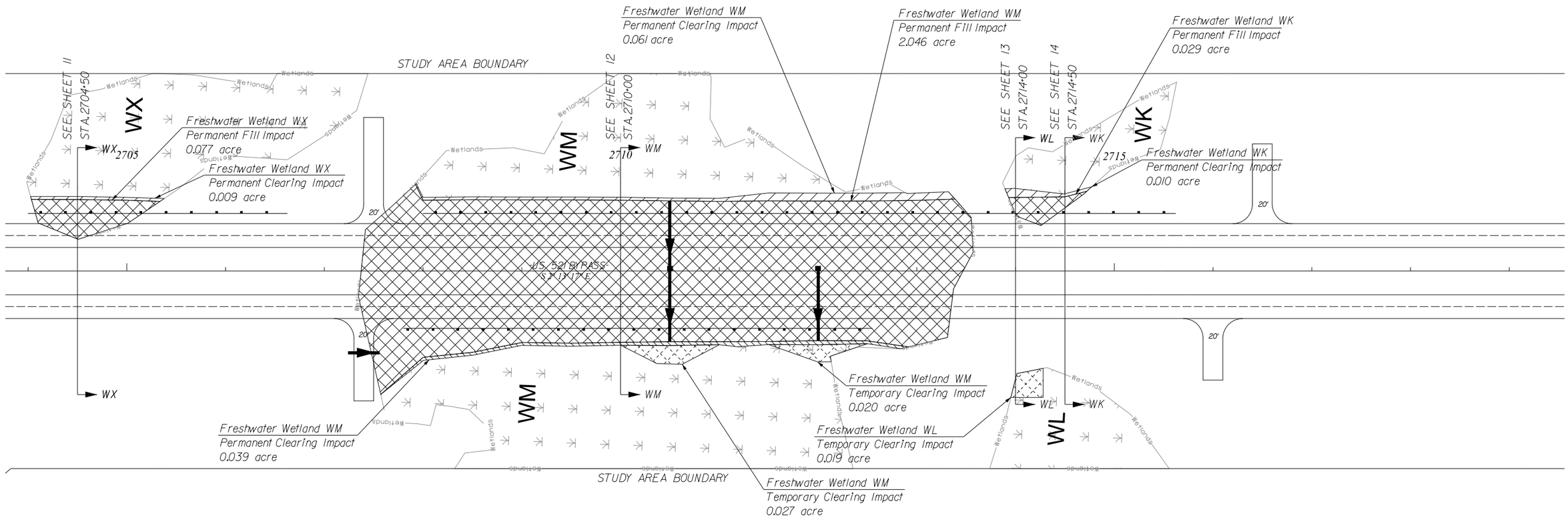
RTE. US 521 DWG. NO.

$$$$$$SYSTIME$$$$$
$$$$USERNAME$$$$
$$$$$$$$$$$$$$$$$$DGN$$$$$$$$$$$$$$$$$$

FED. ROAD DIV. NO.	STATE	COUNTY	PROJECT ID	ROUTE NO.	SHEET NO.	TOTAL SHEETS
3	SC	GEORGETOWN / WILLIAMSBURG	0034125	US 521	10	36

PROJECT IMPACTS

Permanent Wetland Cut/Fill Impact	2.152 acre
Permanent Wetland Clearing Impact	0.119 acre
Temporary Wetland Clearing Impact	0.066 acre
Total Wetland Impacts	2.337 acre



200 100 0 200

SCALE: 1" = 100'

LEGEND
- Freshwater Wetland
- Permanent Cut/Fill Impacts
- Permanent Clearing Impacts
- Temporary Clearing Impacts

CALYX ENGINEERS AND CONSULTANTS, INC. No. C00957 SOUTH CAROLINA CERTIFICATE OF AUTHORIZATION

CALYX ENGINEERS + CONSULTANTS
7500 EAST INDEPENDENCE BOULEVARD, SUITE 100
CHARLOTTE, NC 28227
phone: 704.537.7300
CALYXengineers.com

REV.NO.	BY	DATE	DESCRIPTION OF REVISION
4			
3			
2			
1	TLR	2-14-2018	ADDRESSED COMMENTS BY USAC OF ENGINEERS

TOPO. DATE
DWG. DATE SQUAD -
R/W DATE

SOUTH CAROLINA
DEPARTMENT OF TRANSPORTATION
COLUMBIA, S.C.

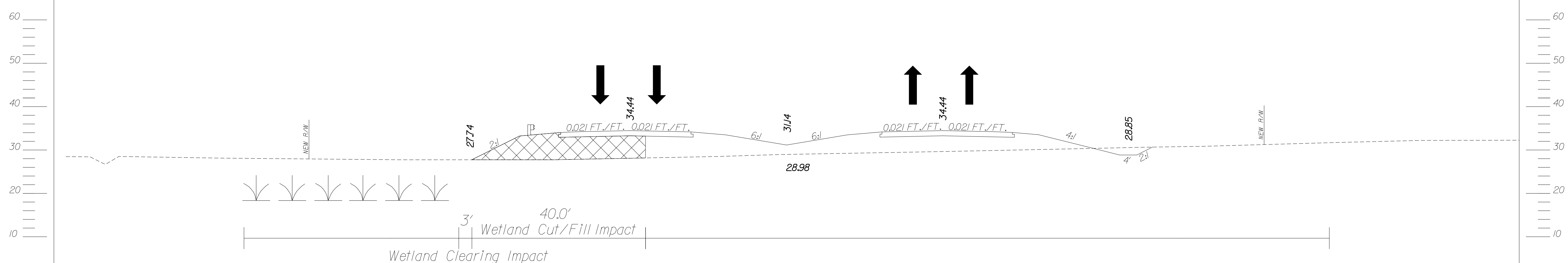
US 521 (ANDREWS BYPASS)
PLAN
DA No.: SAC-2016-01368

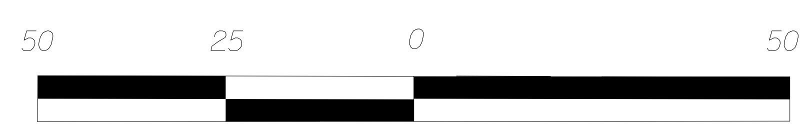
RTE. US 521 DWG. NO.

$$$$$$$SYSTIME$$$$$$
$$$$USERNAME$$$$$
$$$$$$$$$$$$$$$$$$$$DGN$$$$$$$$$$$$$$$$$$$$

FED. ROAD DIV. NO.	STATE	COUNTY	PROJECT ID	ROUTE NO.	SHEET NO.	TOTAL SHEETS
3	SC	GEORGETOWN / WILLIAMSBURG	0034125	US 521	11	36

US 521(ANDREWS BYPASS)
SECTION WX
STATION 2704+50





SCALE: 1" = 25'

LEGEND

Freshwater Wetland

Permanent Cut/Fill Impacts

SOUTH CAROLINA CALYX ENGINEERS AND CONSULTANTS, INC. No. C00957 CERTIFICATE OF AUTHORIZATION

CALYX™ ENGINEERS + CONSULTANTS
7500 EAST INDEPENDENCE
BOULEVARD, SUITE 100
CHARLOTTE, NC 28227
phone: 704.537.7300
CALYXengineers.com

REV. NO.	BY	DATE	DESCRIPTION OF REVISION
4			
3			
2			
1	TLR	2-14-2018	ADDRESSED COMMENTS BY USAC OF ENGINEERS

TOPO. DATE
DWG. DATE
R/W DATE
SQUAD -

SOUTH CAROLINA
DEPARTMENT OF TRANSPORTATION
COLUMBIA, S.C.

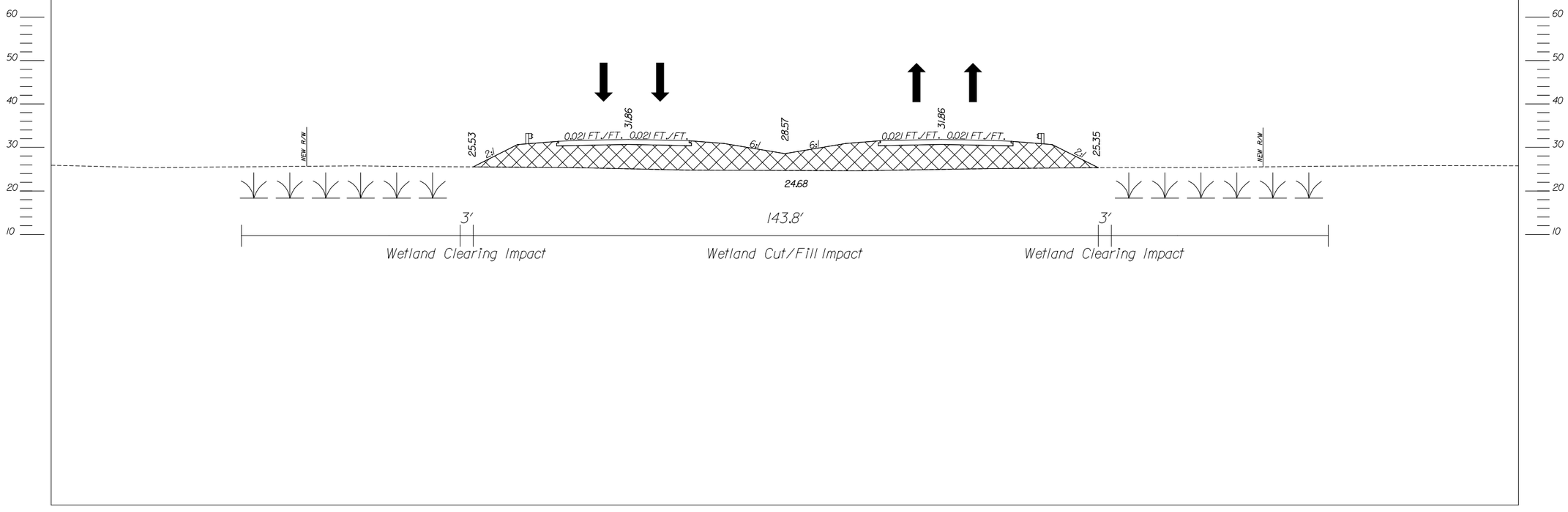
US 521 (ANDREWS BYPASS)
PLAN
DA No.: SAC-2016-01368

RTE. US 521 DWG. NO.

$$$$$$SYSTIME$$$$$
$$$$USERNAME$$$$
$$$$$$$$$$$$$$$$DGN$$$$$$$$$$$$$$$$$$$$

FED. ROAD DIV. NO.	STATE	COUNTY	PROJECT ID	ROUTE NO.	SHEET NO.	TOTAL SHEETS
3	SC	GEORGETOWN / WILLIAMSBURG	0034125	US 521	12	36

US 521 (ANDREWS BYPASS)
SECTION WM
STATION 2710+00



50 25 0 50

SCALE: 1" = 25'

LEGEND

Freshwater Wetland

Permanent Cut/Fill Impacts

SOUTH CAROLINA CALYX ENGINEERS AND CONSULTANTS, INC. No. C00957 CERTIFICATE OF AUTHORIZATION

CALYX ENGINEERS + CONSULTANTS
7500 EAST INDEPENDENCE BOULEVARD, SUITE 100
CHARLOTTE, NC 28227
phone: 704.537.7300
CALYXengineers.com

REV. NO.	BY	DATE	DESCRIPTION OF REVISION
4			
3			
2			
1	TLR	2-14-2018	ADDRESSED COMMENTS BY USAC OF ENGINEERS

TOPO. DATE
DWG. DATE
R/W DATE
SQUAD -

SOUTH CAROLINA
DEPARTMENT OF TRANSPORTATION
COLUMBIA, S.C.

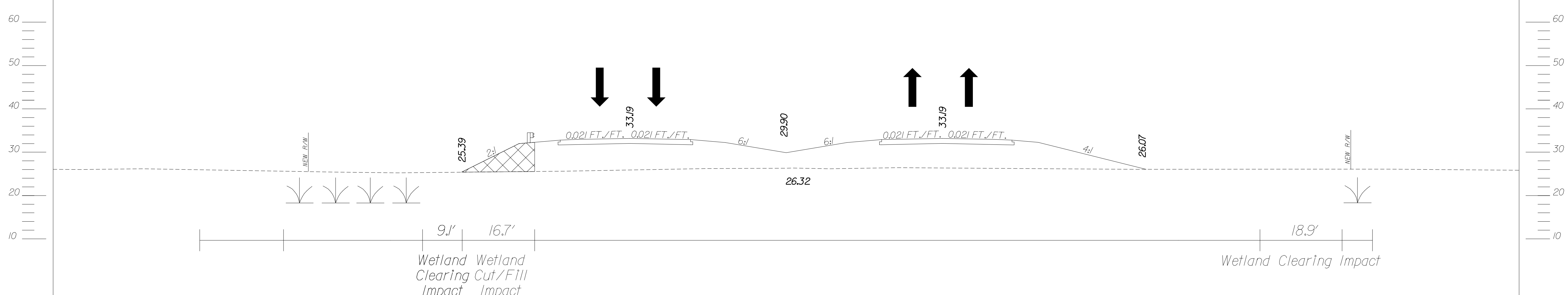
US 521 (ANDREWS BYPASS)
PLAN
DA No.: SAC-2016-01368

RTE. US 521 DWG. NO.

$$$$$$$$SYSTIME$$$$$
$$$$USERNAME$$$$
$$$$$$$$$$$$$$$$$$$$DGN$$$$$$$$$$$$$$$$$$$$

FED. ROAD DIV. NO.	STATE	COUNTY	PROJECT ID	ROUTE NO.	SHEET NO.	TOTAL SHEETS
3	SC	GEORGETOWN / WILLIAMSBURG	0034125	US 521	13	36

US 521(ANDREWS BYPASS)
SECTION WL
STATION 2714+00



50 25 0 50

SCALE: 1" = 25'

LEGEND

Freshwater Wetland

Permanent Cut/Fill Impacts

SOUTH CAROLINA CALYX ENGINEERS AND CONSULTANTS,INC. No. C00957 CERTIFICATE OF AUTHORIZATION

CALYX ENGINEERS + CONSULTANTS
7500 EAST INDEPENDENCE
BOULEVARD, SUITE 100
CHARLOTTE, NC 28227
phone: 704.537.7300
CALYXengineers.com

REV. NO.	BY	DATE	DESCRIPTION OF REVISION
4			
3			
2			
1	TLR	2-14-2018	ADDRESSED COMMENTS BY USAC OF ENGINEERS

TOPO. DATE
DWG. DATE
R/W DATE

SQUAD -

SOUTH CAROLINA
DEPARTMENT OF TRANSPORTATION
COLUMBIA, S.C.

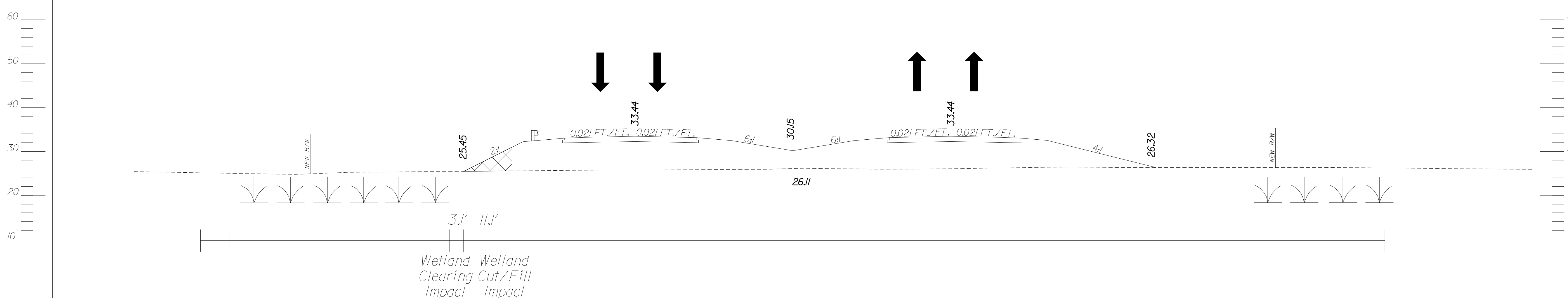
US 521 (ANDREWS BYPASS)
PLAN
DA No.: SAC-2016-01368

RTE. US 521 DWG. NO.

$$$$$$SYSTIME$$$$$
$$$$USERNAME$$$$
$$$$$$$$$$$$$$$$DGN$$$$$$$$$$$$$$$$$$$$$

FED. ROAD DIV. NO.	STATE	COUNTY	PROJECT ID	ROUTE NO.	SHEET NO.	TOTAL SHEETS
3	SC	GEORGETOWN / WILLIAMSBURG	0034125	US 521	14	36

US 521(ANDREWS BYPASS)
SECTION WK
STATION 2714+50



50 25 0 50

SCALE: 1" = 25'

LEGEND

Freshwater Wetland

Permanent Cut/Fill Impacts

SOUTH CAROLINA CALYX ENGINEERS AND CONSULTANTS, INC. No. C00957 CERTIFICATE OF AUTHORIZATION

CALYX ENGINEERS + CONSULTANTS
7500 EAST INDEPENDENCE
BOULEVARD, SUITE 100
CHARLOTTE, NC 28227
phone: 704.537.7300
CALYXengineers.com

REV. NO.	BY	DATE	DESCRIPTION OF REVISION
4			
3			
2			
1	TLR	2-14-2018	ADDRESSED COMMENTS BY USAC OF ENGINEERS

TOPO. DATE
DWG. DATE
R/W DATE
SQUAD -

SOUTH CAROLINA
DEPARTMENT OF TRANSPORTATION
COLUMBIA, S.C.

US 521 (ANDREWS BYPASS)
PLAN
DA No.: SAC-2016-01368

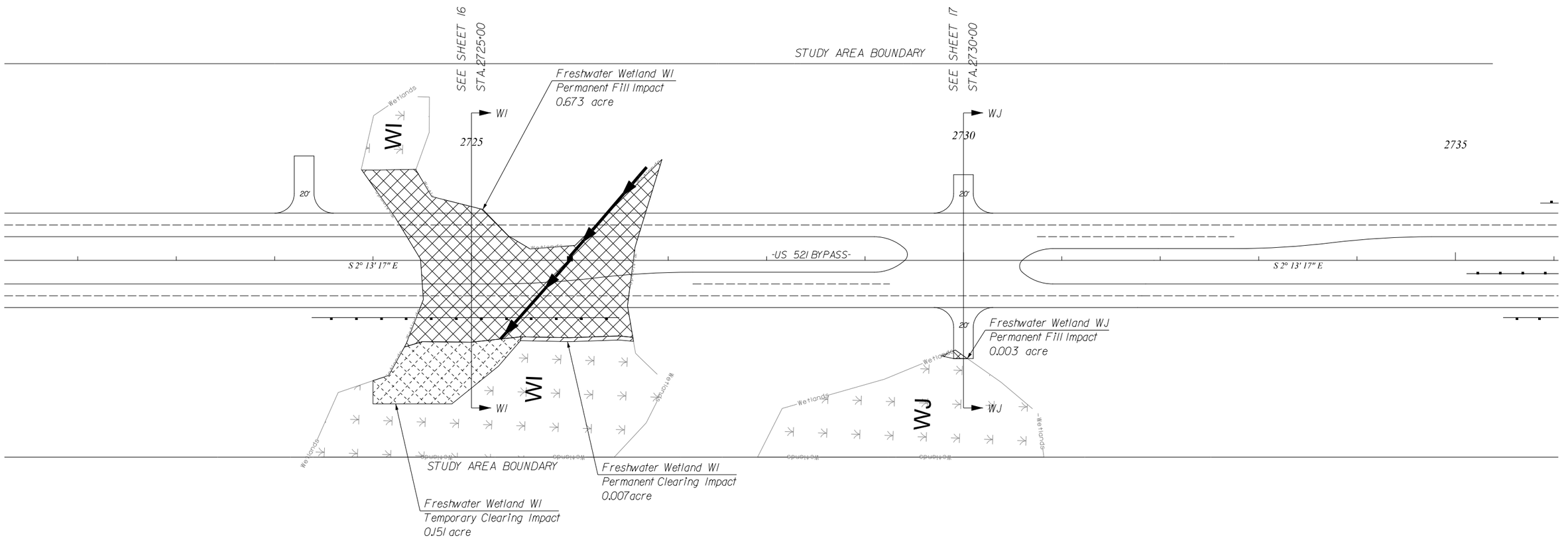
RTE. US 521 DWG. NO.

$$$$$$SYSTIME$$$$$
$$$$USERNAME$$$$
$$$$$$$$$$$$$$$$DGN$$$$$$$$$$$$$$$$$$

FED. ROAD DIV. NO.	STATE	COUNTY	PROJECT ID	ROUTE NO.	SHEET NO.	TOTAL SHEETS
3	SC	GEORGETOWN / WILLIAMSBURG	0034125	US 521	15	36

PROJECT IMPACTS

Permanent Wetland Cut/Fill Impact	0.676 acre
Permanent Wetland Clearing Impact	0.007 acre
Temporary Wetland Clearing Impact	0.151 acre
Total Wetland Impacts	0.834 acre



200 100 0 200

SCALE: 1" = 100'

LEGEND

- Freshwater Wetland
- Permanent Cut/Fill Impacts
- Permanent Clearing Impacts
- Temporary Clearing Impacts

CALYX ENGINEERS AND CONSULTANTS, INC. No. C00957 — SOUTH CAROLINA CERTIFICATE OF AUTHORIZATION

CALYX ENGINEERS + CONSULTANTS

7500 EAST INDEPENDENCE BOULEVARD, SUITE 100
CHARLOTTE, NC 28227
phone: 704.537.7300
CALYXengineers.com

REV. NO.	BY	DATE	DESCRIPTION OF REVISION
4			
3			
2			
1	TLR	2-14-2018	ADDRESSED COMMENTS BY USAC OF ENGINEERS

TOPO. DATE
DWG. DATE
R/W DATE

SQUAD -

SOUTH CAROLINA
DEPARTMENT OF TRANSPORTATION
COLUMBIA, S.C.

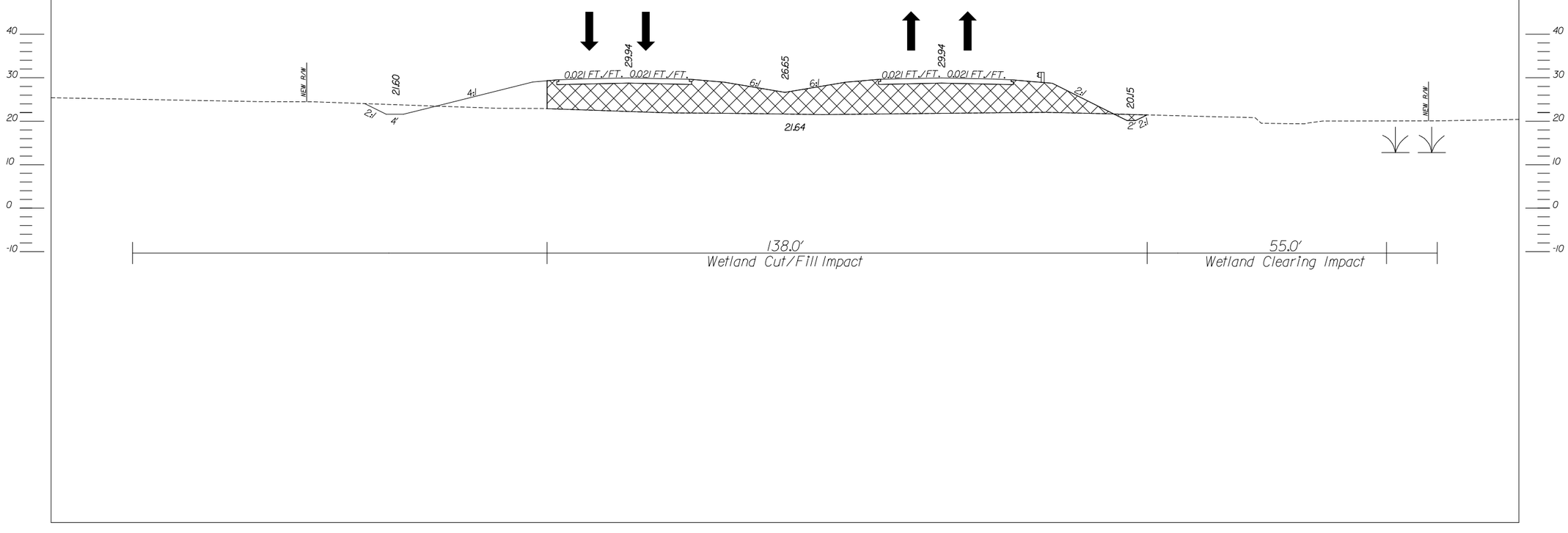
US 521 (ANDREWS BYPASS)
PLAN
DA No.: SAC-2016-01368

RTE. US 521 DWG. NO.

$$$$$$$$SYSTIME$$$$$$
$$$$USERNAME$$$$
$$$$$$$$$$$$$$$$DGN$$$$$$$$$$$$$$$$

FED. ROAD DIV. NO.	STATE	COUNTY	PROJECT ID	ROUTE NO.	SHEET NO.	TOTAL SHEETS
3	SC	GEORGETOWN / WILLIAMSBURG	0034125	US 521	16	36

US 521 (ANDREWS BYPASS)
SECTION W1
STATION 2725+00



50 25 0 50

SCALE: 1" = 25'

LEGEND

Freshwater Wetland

Permanent Cut/Fill Impacts

SOUTH CAROLINA ENGINEERS AND CONSULTANTS, INC. No. C00957 CERTIFICATE OF AUTHORIZATION

CALYX ENGINEERS + CONSULTANTS

7500 EAST INDEPENDENCE BOULEVARD, SUITE 100
CHARLOTTE, NC 28227
phone: 704.537.7300
CALYXengineers.com

REV. NO.	BY	DATE	DESCRIPTION OF REVISION
4			
3			
2			
1	TLR	2-14-2018	ADDRESSED COMMENTS BY USAC OF ENGINEERS

TOPO. DATE
DWG. DATE SQUAD -
R/W DATE

SOUTH CAROLINA
DEPARTMENT OF TRANSPORTATION
COLUMBIA, S.C.

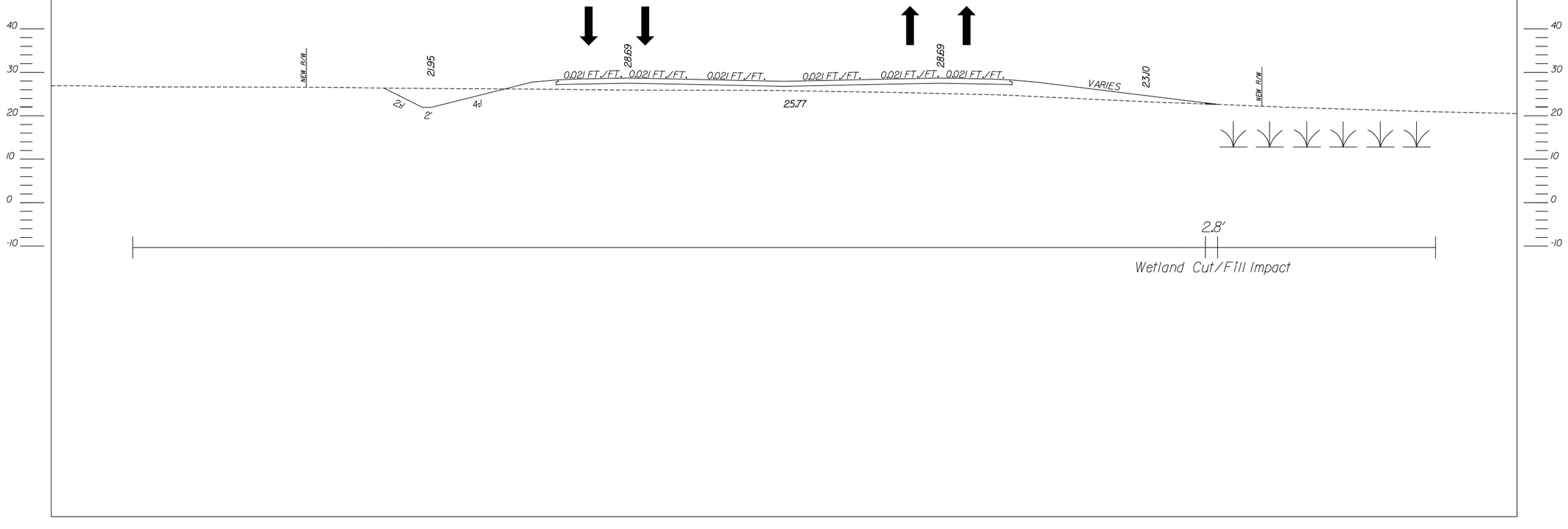
US 521 (ANDREWS BYPASS)
PLAN
DA No.: SAC-2016-01368

RTE. US 521 DWG. NO.

$$$$$$$$SYSTIME$$$$$$
$$$$USERNAME$$$$
$$$$$$$$$$$$$$$$$$$$DGN$$$$$$$$$$$$$$$$$$$$

FED. ROAD DIV. NO.	STATE	COUNTY	PROJECT ID	ROUTE NO.	SHEET NO.	TOTAL SHEETS
3	SC	GEORGETOWN / WILLIAMSBURG	0034125	US 521	17	36

US 521 (ANDREWS BYPASS)
SECTION WJ
STATION 2730+00



50 25 0 50

SCALE: 1" = 25'

LEGEND

Freshwater Wetland

Permanent Cut/Fill Impacts

SOUTH CAROLINA ENGINEERS AND CONSULTANTS, INC. No. C00957 CERTIFICATE OF AUTHORIZATION

CALYX ENGINEERS + CONSULTANTS
7500 EAST INDEPENDENCE BOULEVARD, SUITE 100
CHARLOTTE, NC 28227
phone: 704.537.7300
CALYXengineers.com

REV. NO.	BY	DATE	DESCRIPTION OF REVISION
4			
3			
2			
1	TLR	2-14-2018	ADDRESSED COMMENTS BY USAC OF ENGINEERS

TOPO.	DATE	SQUAD	-
DWG.	DATE		
R/W	DATE		

SOUTH CAROLINA
DEPARTMENT OF TRANSPORTATION
COLUMBIA, S.C.

US 521 (ANDREWS BYPASS)
PLAN
DA No.: SAC-2016-01368

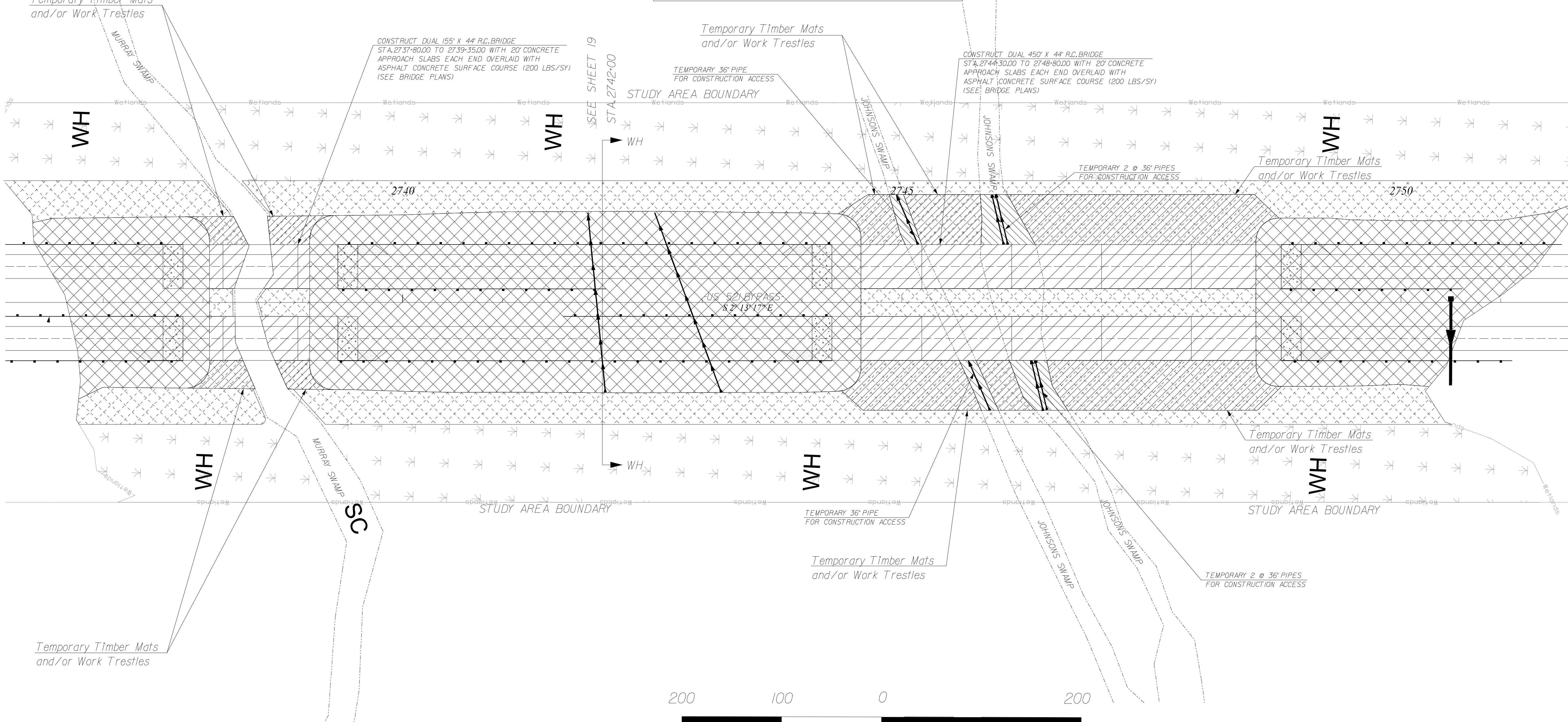
RTE. US 521 DWG. NO.

$$$$$$$$SYSTIME$$$$$$
$$$$USERNAME$$$$
$$$$$$$$$$$$$$$$$$$$DGN$$$$$$$$$$$$$$$$$$

FED. ROAD DIV. NO.	STATE	COUNTY	PROJECT ID	ROUTE NO.	SHEET NO.	TOTAL SHEETS
3	SC	GEORGETOWN / WILLIAMSBURG	0034125	US 521	18	36

PROJECT IMPACTS

Permanent Wetland Cut/Fill Impact	3.765 acre
Permanent Wetland Clearing Impact	0.942 acre
Temporary Wetland Fill Impact	0.124 acre
Temporary Wetland Clearing Impact	3.072 acre
Total Wetland Impacts	7.903 acre



200 100 0 200

SCALE: 1" = 100'

LEGEND

- Temp. Timber Mats/Work Trestles
- Freshwater Wetland
- Permanent Cut/Fill Impacts
- Permanent Clearing Impacts
- Temporary Clearing Impacts
- Temporary Fill Impacts

SOUTH CAROLINA CALYX ENGINEERS AND CONSULTANTS,INC. No. C00957 CERTIFICATE OF AUTHORIZATION

CALYX ENGINEERS + CONSULTANTS
7500 EAST INDEPENDENCE BOULEVARD, SUITE 100
CHARLOTTE, NC 28227
phone: 704.537.7300
CALYXengineers.com

REV. NO.	BY	DATE	DESCRIPTION OF REVISION
4			
3			
2			
1	TLR	2-14-2018	ADDRESSED COMMENTS BY USAC OF ENGINEERS

TOPO. DATE
DWG. DATE
R/W DATE
SQUAD -

SOUTH CAROLINA
DEPARTMENT OF TRANSPORTATION
COLUMBIA, S.C.

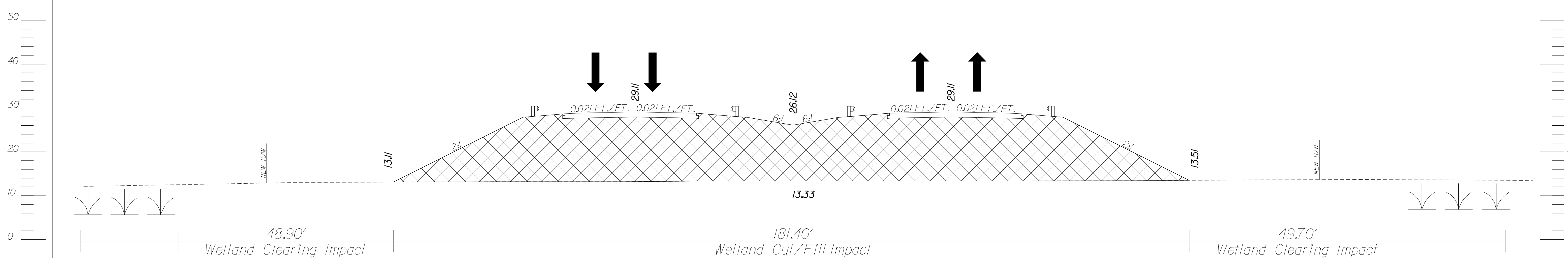
US 521 (ANDREWS BYPASS) PLAN DA No.: SAC-2016-01368

RTE. US 521 DWG. NO.

$$$$$$SYSTIME$$$$$
$$$$USERNAME$$$$
$$$$$$$$$$$$$$$$DGN$$$$$$$$$$$$$$$$$$$

FED. ROAD DIV. NO.	STATE	COUNTY	PROJECT ID	ROUTE NO.	SHEET NO.	TOTAL SHEETS
3	SC	GEORGETOWN / WILLIAMSBURG	0034125	US 521	19	36

US 521(ANDREWS BYPASS)
SECTION WH
STATION 2742+00



SCALE: 1" = 25′

LEGEND

Freshwater Wetland

Permanent Cut/Fill Impacts

SOUTH CAROLINA CALYX ENGINEERS AND CONSULTANTS,INC. No. C00957 CERTIFICATE OF AUTHORIZATION

CALYX™ ENGINEERS + CONSULTANTS
7500 EAST INDEPENDENCE
BOULEVARD, SUITE 100
CHARLOTTE, NC 28227
phone: 704.537.7300
CALYXengineers.com

REV. NO.	BY	DATE	DESCRIPTION OF REVISION
4			
3			
2			
1	TLR	2-14-2018	ADDRESSED COMMENTS BY USAC OF ENGINEERS

TOPO. DATE
DWG. DATE
R/W DATE
SQUAD -

SOUTH CAROLINA
DEPARTMENT OF TRANSPORTATION
COLUMBIA, S.C.

US 521 (ANDREWS BYPASS)
PLAN
DA No.: SAC-2016-01368

RTE. US 521 DWG. NO.

$$$$$SYSTIME$$$$$
$$$$USERNAME$$$$
$$$$$$$$$$$$$$DGN$$$$$$$$$$$$$$$$$$$

DA No.: SAC-2016-01368

FED. ROAD DIV. NO.	STATE	COUNTY	PROJECT ID	ROUTE NO.	SHEET NO.	TOTAL SHEETS
3	SC	GEORGETOWN / WILLIAMSBURG	0034125	US 521	20	36

REV. NO.	BY	DATE	DESCRIPTION OF REVISION
4			
3			
2			
1	TLR	2-14-2018	ADDRESSED COMMENTS BY USAC OF ENGINEERS

CALYX ENGINEERS AND CONSULTANTS, INC. No. C00957 — CERTIFICATE OF AUTHORIZATION — STATE OF SOUTH CAROLINA

CALYX ENGINEERS + CONSULTANTS
7500 EAST INDEPENDENCE BOULEVARD, SUITE 100
CHARLOTTE, NC 28227
phone: 704.537.7300
CALYXengineers.com

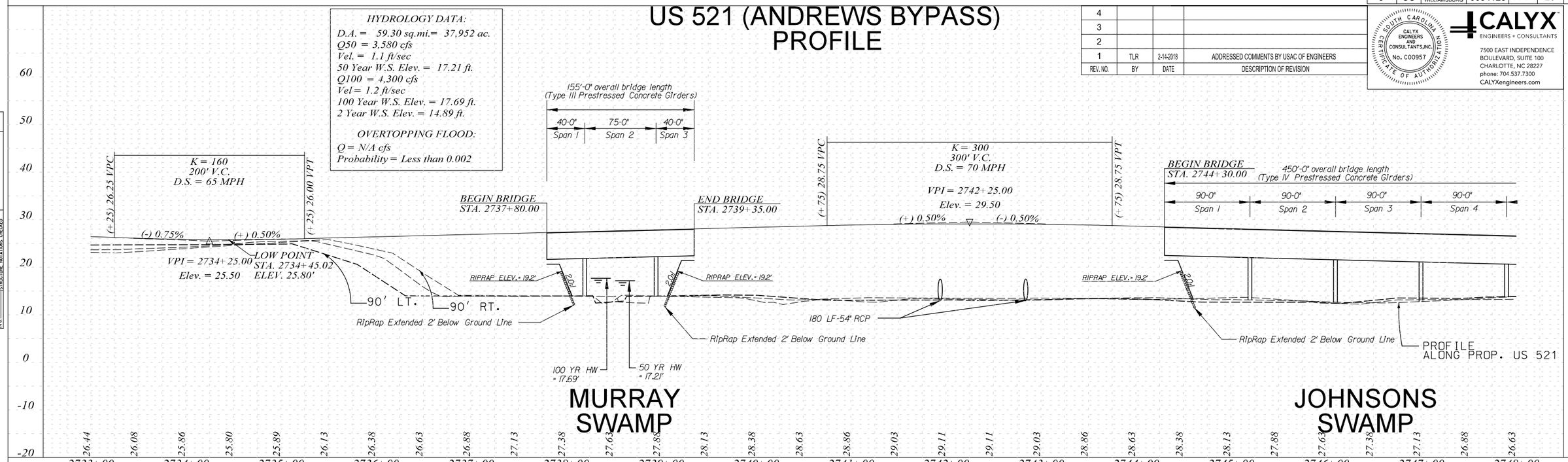
PROFILE | SURVEYED | PLOTTED | NOTE BOOK | PAGE CHECKED | B.M.'S NOTED | STRUCTURE NOTATIONS CHECKED | BY | DATE | No.

$$$$$$SYSTIME$$$$$$
$$$$USERNAME$$$$
$$$$$$$$$$$$$$DGN$$$$$$$$$$$$$$

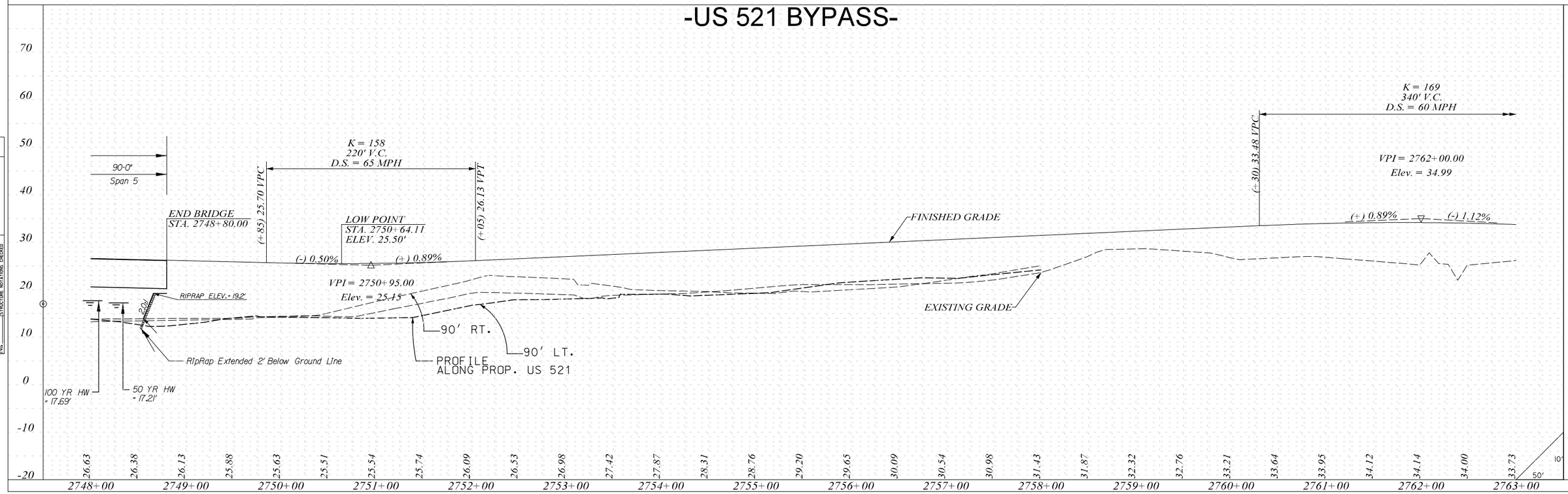
US 521 (ANDREWS BYPASS) PROFILE

HYDROLOGY DATA:
D.A. = 59.30 sq.mi.= 37,952 ac.
Q50 = 3,580 cfs
Vel. = 1.1 ft/sec
50 Year W.S. Elev. = 17.21 ft.
Q100 = 4,300 cfs
Vel = 1.2 ft/sec
100 Year W.S. Elev. = 17.69 ft.
2 Year W.S. Elev. = 14.89 ft.

OVERTOPPING FLOOD:
Q = N/A cfs
Probability = Less than 0.002



-US 521 BYPASS-



DA No.: SAC-2016-01368

FED. ROAD DIV. NO.	STATE	COUNTY	PROJECT ID	ROUTE NO.	SHEET NO.	TOTAL SHEETS
3	SC	GEORGETOWN / WILLIAMSBURG	0034125	US 521	21	36

REV. NO.	BY	DATE	DESCRIPTION OF REVISION
3			
2			
1	TLR	2-14-2016	ADDRESSED COMMENTS BY USAC OF ENGINEERS

TOPO. DATE
DWG. DATE
R/W DATE
SQUAD -

SOUTH CAROLINA CERTIFICATE OF AUTHORIZATION
CALYX ENGINEERS AND CONSULTANTS, INC
No. C00957

CALYX ENGINEERS + CONSULTANTS
7500 EAST INDEPENDENCE BOULEVARD, SUITE 100
CHARLOTTE, NC 28227
phone: 704.537.7300
CALYXengineers.com

-US 521 BYPASS- CROSS SECTION JOHNSONS SWAMP

(+75) 28.75 VPT

BEGIN BRIDGE
STA. 2744+30.00

FINISHED GRADE

END BRIDGE
STA. 2748+80.00

54" PIPE
STA. 2742+86.00
EL = 13.00'

RIPRAP ELEV. = 19.2'

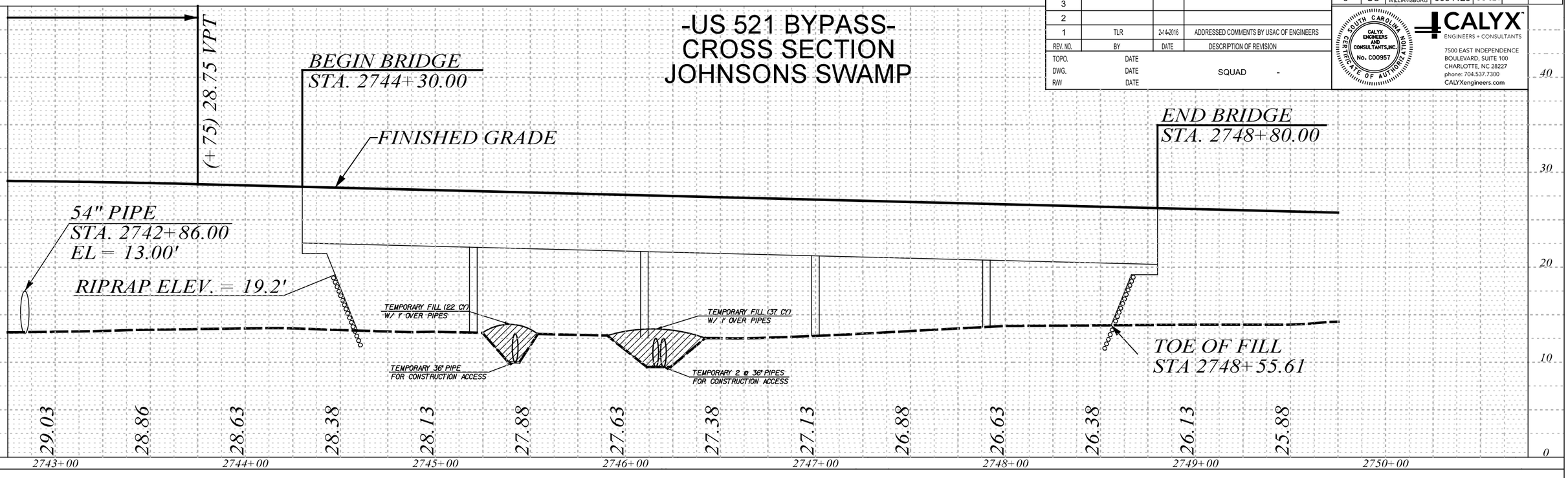
TEMPORARY FILL (22 CY) W/ 1' OVER PIPES

TEMPORARY 36" PIPE FOR CONSTRUCTION ACCESS

TEMPORARY FILL (37 CY) W/ 1' OVER PIPES

TEMPORARY 2 @ 36" PIPES FOR CONSTRUCTION ACCESS

TOE OF FILL
STA 2748+55.61



PROFILE
SURVEYED
PLOTTED
NOTE BOOK
NO's
DATE
BY
CHECKED
BM's NOTED
STRUCTURE NOTATIONS CHECKED

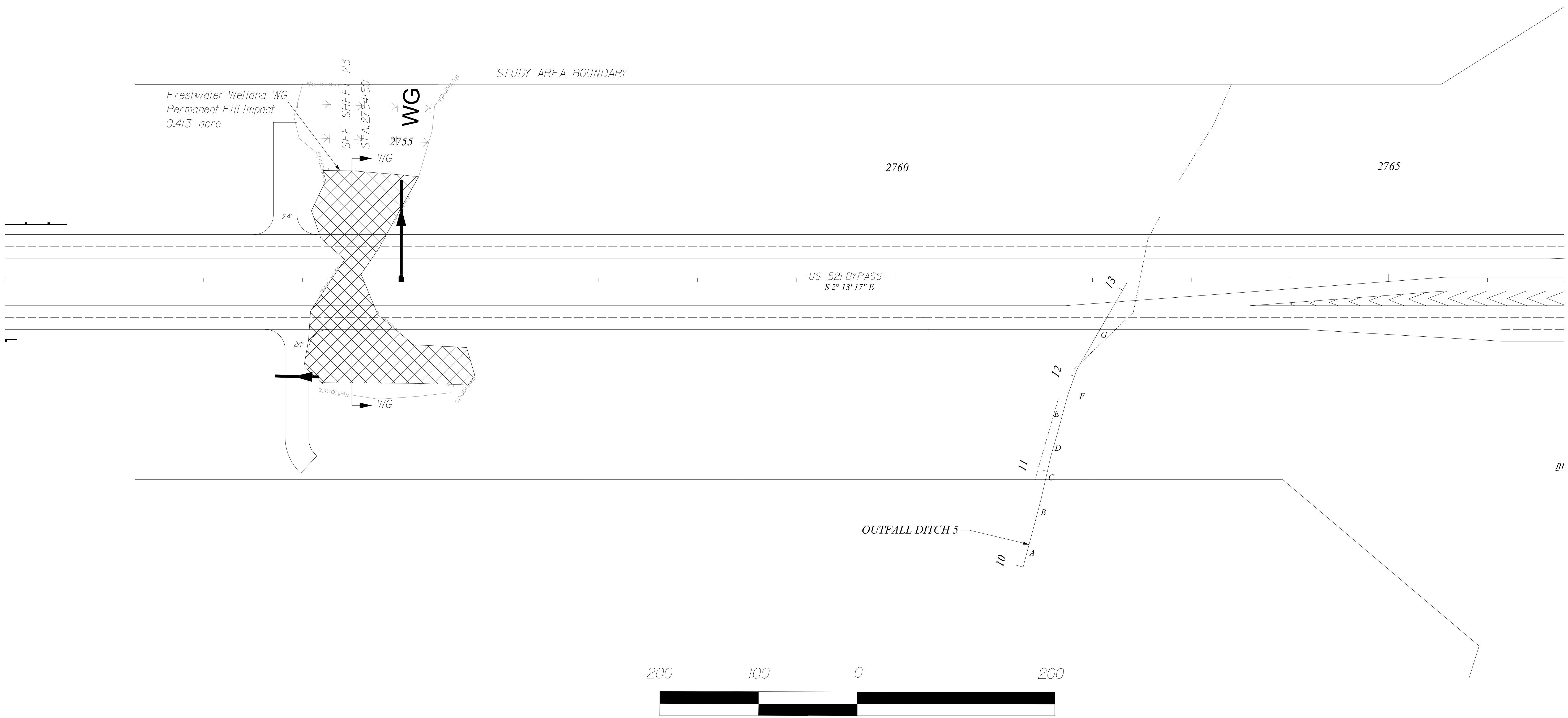
3/9/2018
3:49:56 PM
R:\Hydraulics\Permits\Andrews_Permit PSH 21Temp Pipes Profile.dgn

FED. ROAD DIV. NO.	STATE	COUNTY	PROJECT ID	ROUTE NO.	SHEET NO.	TOTAL SHEETS
3	SC	GEORGETOWN / WILLIAMSBURG	0034125	US 521	22	36

PROJECT IMPACTS

Permanent Wetland Cut/Fill Impact	0.413 acre
Permanent Wetland Clearing Impact	0.000 acre
Total Wetland Impacts	0.413 acre

-N-



SCALE: 1" = 100'

LEGEND
- Freshwater Wetland
- Permanent Cut/Fill Impacts
- Permanent Clearing Impacts
- Temporary Clearing Impacts

SOUTH CAROLINA CALYX ENGINEERS AND CONSULTANTS, INC. No. C00957 CERTIFICATE OF AUTHORIZATION

CALYX ENGINEERS + CONSULTANTS
7500 EAST INDEPENDENCE BOULEVARD, SUITE 100
CHARLOTTE, NC 28227
phone: 704.537.7300
CALYXengineers.com

REV. NO.	BY	DATE	DESCRIPTION OF REVISION
4			
3			
2			
1	TLR	2-14-2018	ADDRESSED COMMENTS BY USAC OF ENGINEERS

TOPO. DATE
DWG. DATE
R/W DATE
SQUAD -

SOUTH CAROLINA
DEPARTMENT OF TRANSPORTATION
COLUMBIA, S.C.

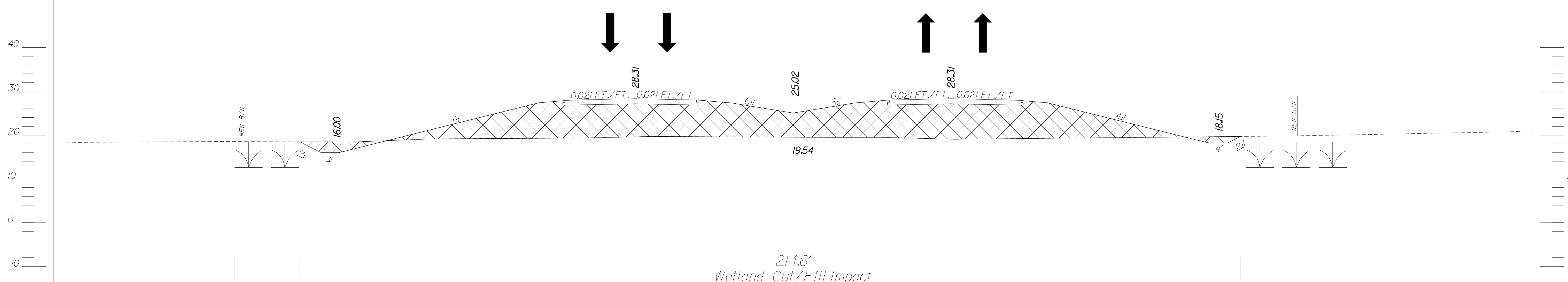
US 521 (ANDREWS BYPASS)
PLAN
DA No.: SAC-2016-01368

RTE. US 521 DWG. NO.

$$$$$$SYSTIME$$$$$
$$$$USERNAME$$$$
$$$$$$$$$$$$$$$$DGN$$$$$$$$$$$$$$$$$$

FED. ROAD DIV. NO.	STATE	COUNTY	PROJECT ID	ROUTE NO.	SHEET NO.	TOTAL SHEETS
3	SC	GEORGETOWN / WILLIAMSBURG	0034125	US 521	23	36

US 521(ANDREWS BYPASS)
SECTION WG
STATION 2754+50



50 25 0 50

SCALE: 1" = 25'

LEGEND
Freshwater Wetland
Permanent Cut/Fill Impacts

SOUTH CAROLINA CALYX ENGINEERS AND CONSULTANTS, INC. No. C00957 CERTIFICATE OF AUTHORIZATION

CALYX™ ENGINEERS + CONSULTANTS
7500 EAST INDEPENDENCE BOULEVARD, SUITE 100
CHARLOTTE, NC 28227
phone: 704.537.7300
CALYXengineers.com

REV. NO.	BY	DATE	DESCRIPTION OF REVISION
4			
3			
2			
1	TLR	2-14-2018	ADDRESSED COMMENTS BY USAC OF ENGINEERS

TOPO. DATE
DWG. DATE
R/W DATE
SQUAD -

SOUTH CAROLINA
DEPARTMENT OF TRANSPORTATION
COLUMBIA, S.C.

US 521 (ANDREWS BYPASS)
PLAN
DA No.: SAC-2016-01368

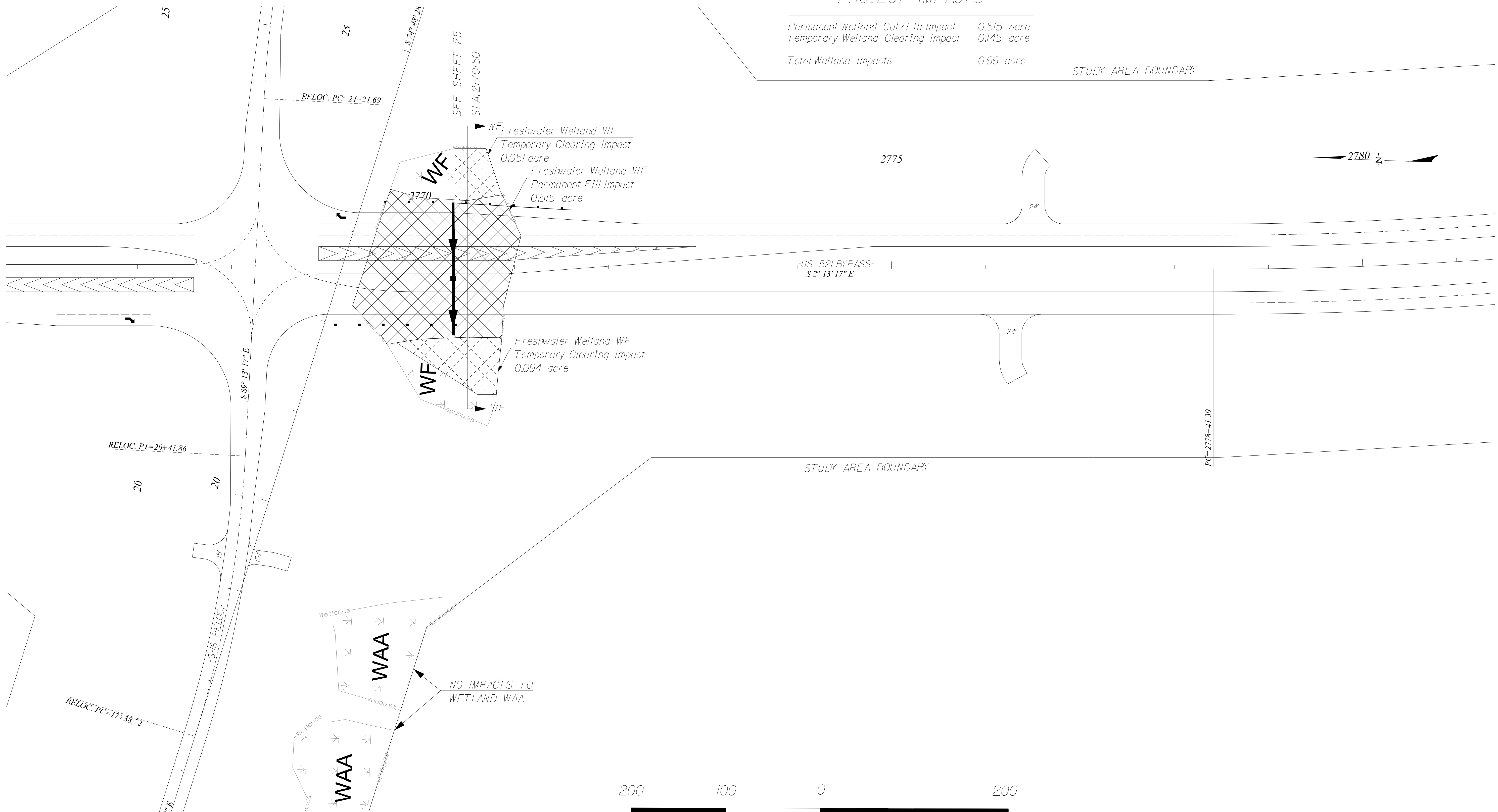
RTE. US 521 DWG. NO.

$$$$$$SYSTIME$$$$$
$$$$USERNAME$$$$
$$$$$$$$$$$$$$$DGN$$$$$$$$$$$$$$$$$$

FED. ROAD DIV. NO.	STATE	COUNTY	PROJECT ID	ROUTE NO.	SHEET NO.	TOTAL SHEETS
3	SC	GEORGETOWN / WILLIAMSBURG	0034125	US 521	24	36

PROJECT IMPACTS

Permanent Wetland Cut/Fill Impact	0.515 acre
Temporary Wetland Clearing Impact	0.145 acre
Total Wetland Impacts	0.66 acre



200 100 0 200

SCALE: 1" = 100'

LEGEND
- Freshwater Wetland
- Permanent Cut/Fill Impacts
- Permanent Clearing Impacts
- Temporary Clearing Impacts

SOUTH CAROLINA CALYX ENGINEERS AND CONSULTANTS, INC. No. C00957 CERTIFICATE OF AUTHORIZATION

CALYX ENGINEERS + CONSULTANTS
7500 EAST INDEPENDENCE BOULEVARD, SUITE 100
CHARLOTTE, NC 28227
phone: 704.537.7300
CALYXengineers.com

REV. NO.	BY	DATE	DESCRIPTION OF REVISION
4			
3			
2			
1	TLR	2-14-2018	ADDRESSED COMMENTS BY USAC OF ENGINEERS

TOPO. DATE
DWG. DATE
R/W DATE
SQUAD -

SOUTH CAROLINA
DEPARTMENT OF TRANSPORTATION
COLUMBIA, S.C.

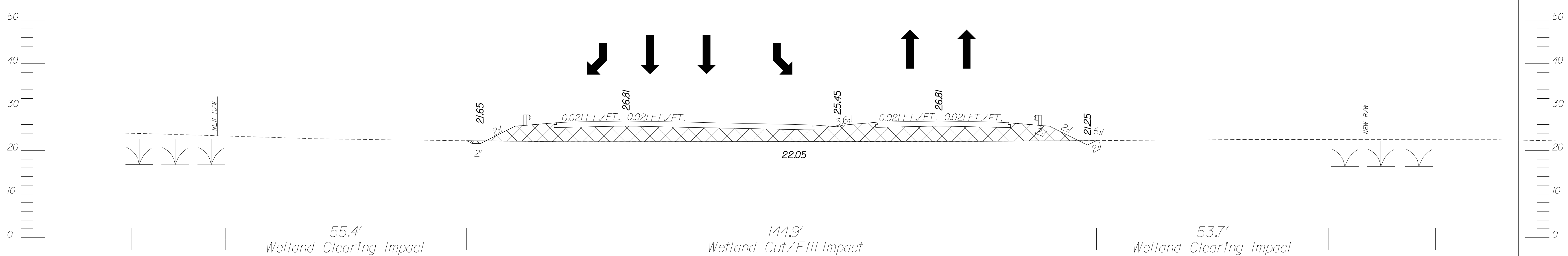
US 521 (ANDREWS BYPASS)
PLAN
DA No.: SAC-2016-01368

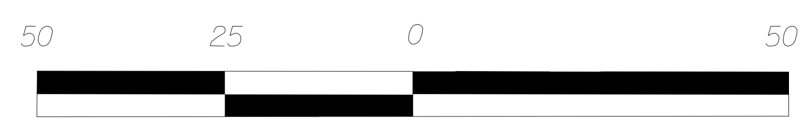
RTE. US 521 DWG. NO.

$$$$$SYSTIME$$$$$
$$$$USERNAME$$$$
$$$$$$$$$$$$$$$DGN$$$$$$$$$$$$$$$$$$

FED. ROAD DIV. NO.	STATE	COUNTY	PROJECT ID	ROUTE NO.	SHEET NO.	TOTAL SHEETS
3	SC	GEORGETOWN / WILLIAMSBURG	0034125	US 521	25	36

US 521(ANDREWS BYPASS)
SECTION WF
STATION 2770+50





SCALE: 1" = 25'

LEGEND

Freshwater Wetland

Permanent Cut/Fill Impacts

SOUTH CAROLINA CALYX ENGINEERS AND CONSULTANTS, INC. No. C00957 CERTIFICATE OF AUTHORIZATION

CALYX ENGINEERS + CONSULTANTS
7500 EAST INDEPENDENCE
BOULEVARD, SUITE 100
CHARLOTTE, NC 28227
phone: 704.537.7300
CALYXengineers.com

REV. NO.	BY	DATE	DESCRIPTION OF REVISION
4			
3			
2			
1	TLR	2-14-2018	ADDRESSED COMMENTS BY USAC OF ENGINEERS

TOPO. DATE
DWG. DATE
R/W DATE
SQUAD -

SOUTH CAROLINA
DEPARTMENT OF TRANSPORTATION
COLUMBIA, S.C.

US 521 (ANDREWS BYPASS)
PLAN
DA No.: SAC-2016-01368

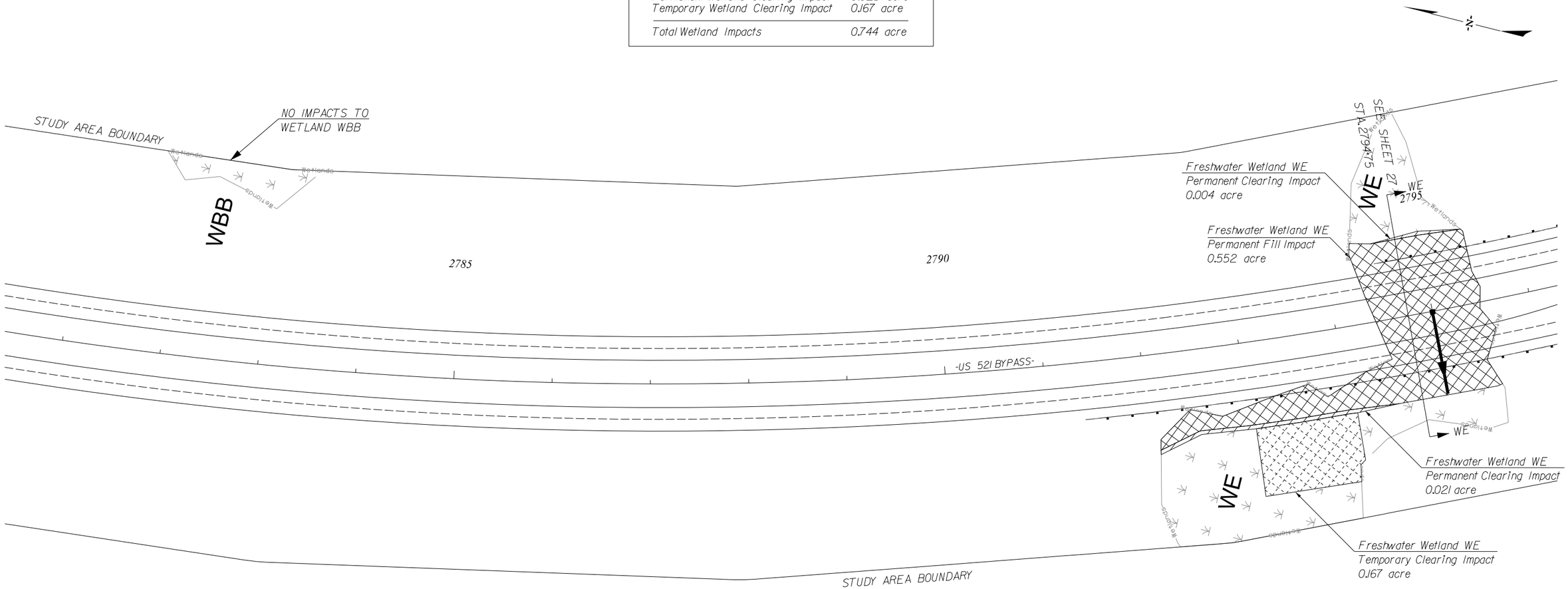
RTE. US 521 DWG. NO.

$$$$$$SYSTIME$$$$$
$$$$USERNAME$$$$
$$$$$$$$$$$$$$DGN$$$$$$$$$$$$$$$$$$$$

FED. ROAD DIV. NO.	STATE	COUNTY	PROJECT ID	ROUTE NO.	SHEET NO.	TOTAL SHEETS
3	SC	GEORGETOWN / WILLIAMSBURG	0034125	US 521	26	36

PROJECT IMPACTS

Permanent Wetland Cut/Fill Impact	0.552 acre
Permanent Wetland Clearing Impact	0.025 acre
Temporary Wetland Clearing Impact	0.167 acre
Total Wetland Impacts	0.744 acre



200 100 0 200

SCALE: 1" = 100'

LEGEND
- Freshwater Wetland
- Permanent Cut/Fill Impacts
- Permanent Clearing Impacts
- Temporary Clearing Impacts

SOUTH CAROLINA CERTIFICATE OF AUTHORIZATION
CALYX ENGINEERS AND CONSULTANTS, INC.
No. C00957

CALYX ENGINEERS + CONSULTANTS
7500 EAST INDEPENDENCE BOULEVARD, SUITE 100
CHARLOTTE, NC 28227
phone: 704.537.7300
CALYXengineers.com

REV. NO.	BY	DATE	DESCRIPTION OF REVISION
4			
3			
2			
1	TLR	2-14-2018	ADDRESSED COMMENTS BY USAC OF ENGINEERS

TOPO.	DATE	
DWG.	DATE	SQUAD -
R/W	DATE	

SOUTH CAROLINA
DEPARTMENT OF TRANSPORTATION
COLUMBIA, S.C.

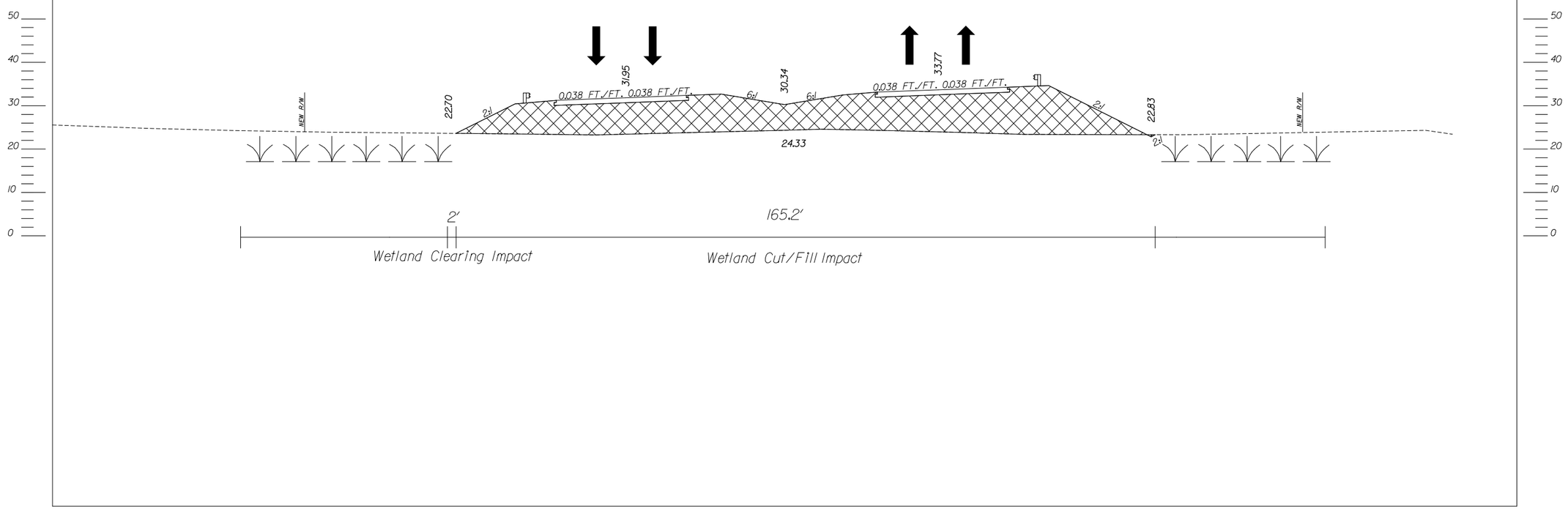
US 521 (ANDREWS BYPASS)
PLAN
DA No.: SAC-2016-01368

RTE. US 521 DWG. NO.

$$$$$$$SYSTIME$$$$$
$$$$USERNAME$$$$
$$$$$$$$$$$$$$$$$$$$DGN$$$$$$$$$$$$$$$$$$$$

FED. ROAD DIV. NO.	STATE	COUNTY	PROJECT ID	ROUTE NO.	SHEET NO.	TOTAL SHEETS
3	SC	GEORGETOWN / WILLIAMSBURG	0034125	US 521	27	36

US 521 (ANDREWS BYPASS)
SECTION WE
STATION 2794+75



50 25 0 50

SCALE: 1" = 25'

LEGEND

Freshwater Wetland

Permanent Cut/Fill Impacts

SOUTH CAROLINA ENGINEERS AND CONSULTANTS, INC. No. C00957 CERTIFICATE OF AUTHORIZATION

CALYX ENGINEERS + CONSULTANTS

7500 EAST INDEPENDENCE BOULEVARD, SUITE 100
CHARLOTTE, NC 28227
phone: 704.537.7300
CALYXengineers.com

REV. NO.	BY	DATE	DESCRIPTION OF REVISION
4			
3			
2			
1	TLR	2-14-2018	ADDRESSED COMMENTS BY USAC OF ENGINEERS

TOPO. DATE
DWG. DATE
R/W DATE
SQUAD -

SOUTH CAROLINA
DEPARTMENT OF TRANSPORTATION
COLUMBIA, S.C.

US 521 (ANDREWS BYPASS)
PLAN
DA No.: SAC-2016-01368

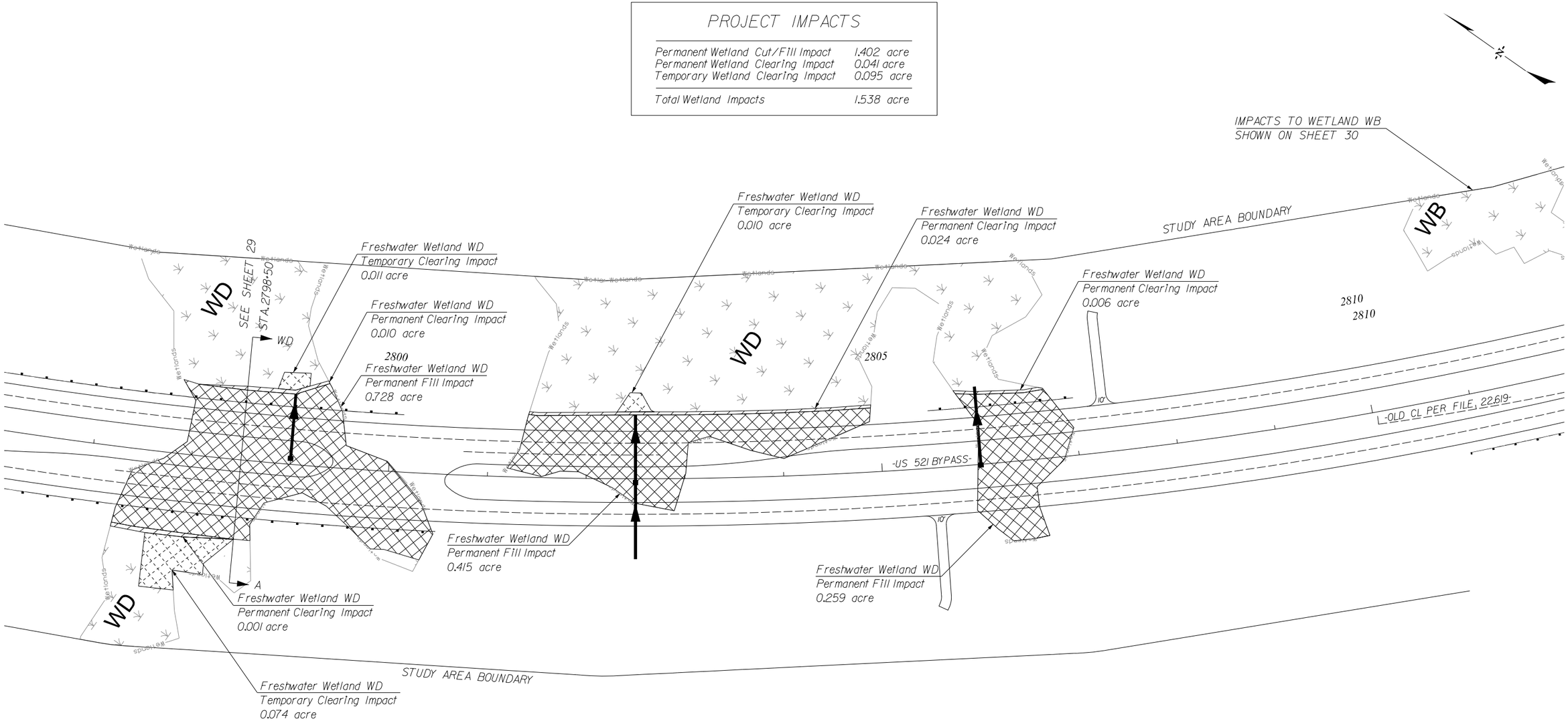
RTE. US 521 DWG. NO.

$$$$$$$$SYSTIME$$$$$$
$$$$$USERNAME$$$$$
$$$$$$$$$$$$$$$$$$$$DGN$$$$$$$$$$$$$$$$$$$$

FED. ROAD DIV. NO.	STATE	COUNTY	PROJECT ID	ROUTE NO.	SHEET NO.	TOTAL SHEETS
3	SC	GEORGETOWN / WILLIAMSBURG	0034125	US 521	28	36

PROJECT IMPACTS

Permanent Wetland Cut/Fill Impact	1.402 acre
Permanent Wetland Clearing Impact	0.041 acre
Temporary Wetland Clearing Impact	0.095 acre
Total Wetland Impacts	1.538 acre



200 100 0 200

SCALE: 1" = 100'

LEGEND

- Freshwater Wetland
- Permanent Cut/Fill Impacts
- Permanent Clearing Impacts
- Temporary Clearing Impacts

SOUTH CAROLINA ENGINEERS AND CONSULTANTS, INC. No. C00957 CERTIFICATE OF AUTHORIZATION

CALYX ENGINEERS + CONSULTANTS
7500 EAST INDEPENDENCE BOULEVARD, SUITE 100
CHARLOTTE, NC 28227
phone: 704.537.7300
CALYXengineers.com

REV. NO.	BY	DATE	DESCRIPTION OF REVISION
4			
3			
2			
1	TLR	2-14-2018	ADDRESSED COMMENTS BY USAC OF ENGINEERS

TOPO. DATE
DWG. DATE
R/W DATE
SQUAD -

SOUTH CAROLINA
DEPARTMENT OF TRANSPORTATION
COLUMBIA, S.C.

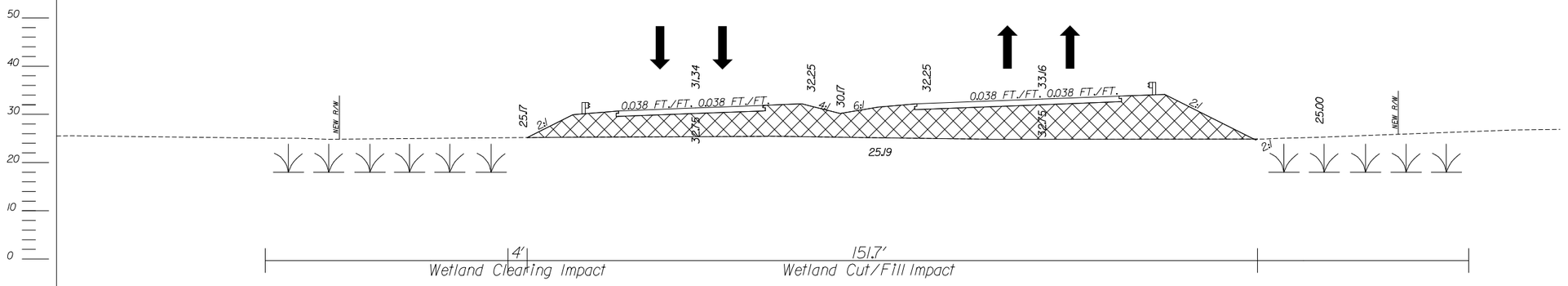
US 521 (ANDREWS BYPASS)
PLAN
DA No.: SAC-2016-01368

RTE. US 521 DWG. NO.

$$$$$$$$SYSTIME$$$$$$
$$$$$USERNAME$$$$$
$$$$$$$$$$$$$$$$$$$$DGN$$$$$$$$$$$$$$$$$$$$

FED. ROAD DIV. NO.	STATE	COUNTY	PROJECT ID	ROUTE NO.	SHEET NO.	TOTAL SHEETS
3	SC	GEORGETOWN / WILLIAMSBURG	0034125	US 521	29	36

US 521 (ANDREWS BYPASS)
SECTION WD
STATION 2798+50



50 25 0 50

SCALE: 1" = 25'

LEGEND

Freshwater Wetland

Permanent Cut/Fill Impacts

SOUTH CAROLINA CALYX ENGINEERS AND CONSULTANTS, INC. No. C00957 CERTIFICATE OF AUTHORIZATION

CALYX ENGINEERS + CONSULTANTS
7500 EAST INDEPENDENCE BOULEVARD, SUITE 100
CHARLOTTE, NC 28227
phone: 704.537.7300
CALYXengineers.com

REV. NO.	BY	DATE	DESCRIPTION OF REVISION
4			
3			
2			
1	TLR	2-14-2018	ADDRESSED COMMENTS BY USAC OF ENGINEERS

TOPO.	DATE	SQUAD	-
DWG.	DATE		
R/W	DATE		

SOUTH CAROLINA
DEPARTMENT OF TRANSPORTATION
COLUMBIA, S.C.

US 521 (ANDREWS BYPASS)
PLAN
DA No.: SAC-2016-01368

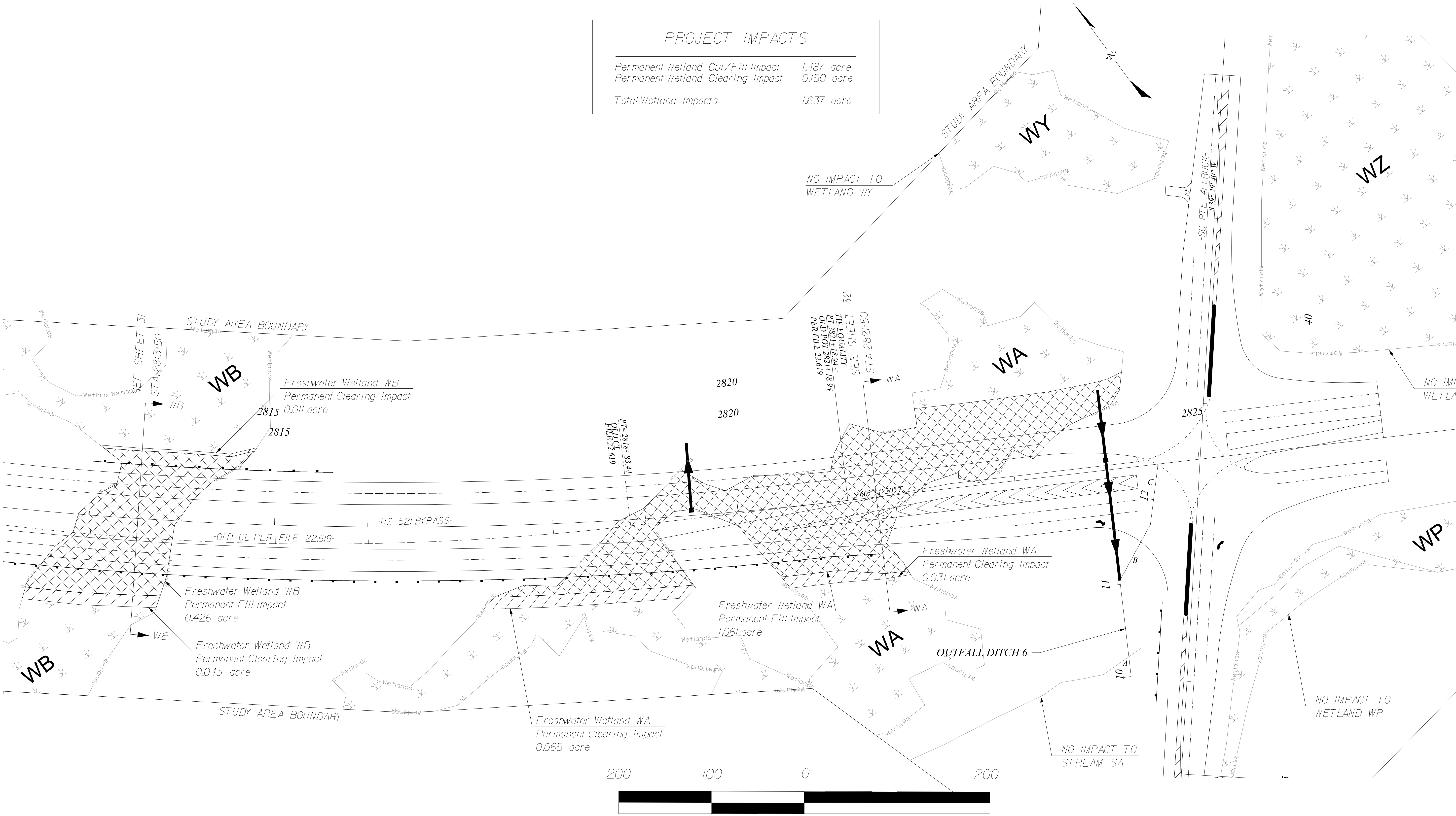
RTE. US 521 DWG. NO.

$$$$$$$SYSTIME$$$$$
$$$$USERNAME$$$$$
$$$$$$$$$$$$$$$$$$$$DGN$$$$$$$$$$$$$$$$$$

FED. ROAD DIV. NO.	STATE	COUNTY	PROJECT ID	ROUTE NO.	SHEET NO.	TOTAL SHEETS
3	SC	GEORGETOWN / WILLIAMSBURG	0034125	US 521	30	36

PROJECT IMPACTS

Permanent Wetland Cut/Fill Impact	1.487 acre
Permanent Wetland Clearing Impact	0.150 acre
Total Wetland Impacts	1.637 acre



SCALE: 1" = 100'

LEGEND	
Freshwater Wetland	▨
Permanent Cut/Fill Impacts	▦
Permanent Clearing Impacts	▨
Temporary Clearing Impacts	▩

SOUTH CAROLINA CALYX ENGINEERS AND CONSULTANTS, INC. No. C00957 CERTIFICATE OF AUTHORIZATION

CALYX ENGINEERS + CONSULTANTS
7500 EAST INDEPENDENCE BOULEVARD, SUITE 100
CHARLOTTE, NC 28227
phone: 704.537.7300
CALYXengineers.com

REV. NO.	BY	DATE	DESCRIPTION OF REVISION
4			
3			
2			
1	TLR	2-14-2018	ADDRESSED COMMENTS BY USAC OF ENGINEERS

TOPO.	DATE	
DWG.	DATE	SQUAD -
R/W	DATE	

SOUTH CAROLINA
DEPARTMENT OF TRANSPORTATION
COLUMBIA, S.C.

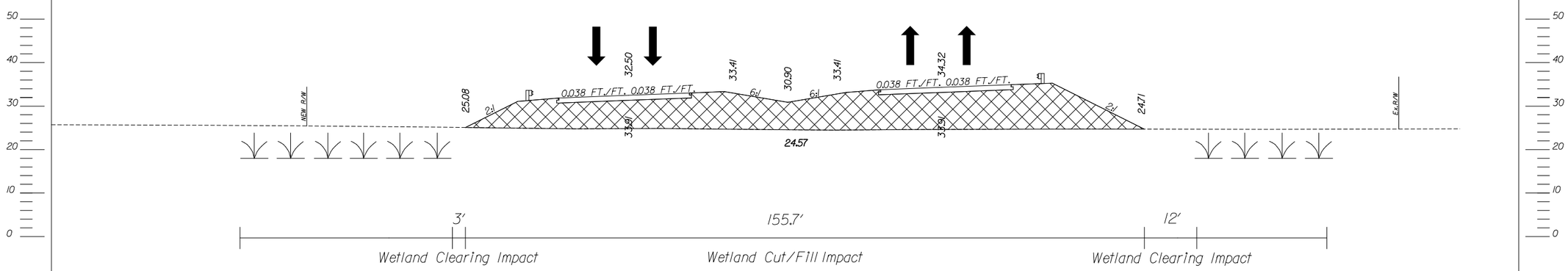
US 521 (ANDREWS BYPASS)
PLAN
DA No.: SAC-2016-01368

RTE. US 521 DWG. NO.

$$$$$$SYSTIME$$$$$
$$$$USERNAME$$$$
$$$$$$$$$$$$$$$$DGN$$$$$$$$$$$$$$$$$$

FED. ROAD DIV. NO.	STATE	COUNTY	PROJECT ID	ROUTE NO.	SHEET NO.	TOTAL SHEETS
3	SC	GEORGETOWN / WILLIAMSBURG	0034125	US 521	31	36

US 521 (ANDREWS BYPASS)
SECTION WB
STATION 2813+50



50 25 0 50

SCALE: 1" = 25'

LEGEND

Freshwater Wetland

Permanent Cut/Fill Impacts

SOUTH CAROLINA ENGINEERS AND CONSULTANTS, INC. No. C00957 CERTIFICATE OF AUTHORIZATION

CALYX ENGINEERS + CONSULTANTS
7500 EAST INDEPENDENCE BOULEVARD, SUITE 100
CHARLOTTE, NC 28227
phone: 704.537.7300
CALYXengineers.com

REV. NO.	BY	DATE	DESCRIPTION OF REVISION
4			
3			
2			
1	TLR	2-14-2018	ADDRESSED COMMENTS BY USAC OF ENGINEERS

TOPO. DATE
DWG. DATE SQUAD -
R/W DATE

SOUTH CAROLINA
DEPARTMENT OF TRANSPORTATION
COLUMBIA, S.C.

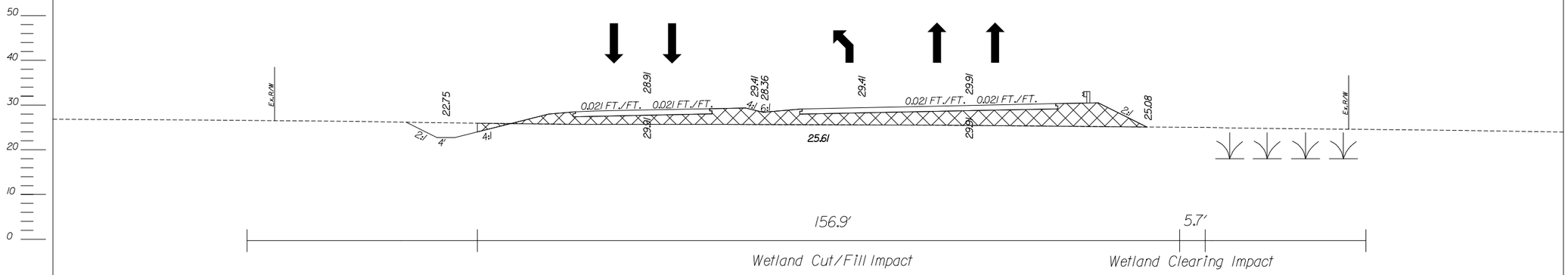
US 521 (ANDREWS BYPASS)
PLAN
DA No.: SAC-2016-01368

RTE. US 521 DWG. NO.

$$$$$$$$SYSTIME$$$$$
$$$$USERNAME$$$$
$$$$$$$$$$$$$$$$$$$$DGNS$$$$$$$$$$$$$$$$$$

FED. ROAD DIV. NO.	STATE	COUNTY	PROJECT ID	ROUTE NO.	SHEET NO.	TOTAL SHEETS
3	SC	GEORGETOWN / WILLIAMSBURG	0034125	US 521	32	36

US 521 (ANDREWS BYPASS)
SECTION WA
STATION 2821+50



50 25 0 50

SCALE: 1" = 25'

LEGEND

Freshwater Wetland

Permanent Cut/Fill Impacts

SOUTH CAROLINA ENGINEERS AND CONSULTANTS, INC. No. C00957 CERTIFICATE OF AUTHORIZATION

CALYX ENGINEERS + CONSULTANTS
7500 EAST INDEPENDENCE BOULEVARD, SUITE 100
CHARLOTTE, NC 28227
phone: 704.537.7300
CALYXengineers.com

REV. NO.	BY	DATE	DESCRIPTION OF REVISION
4			
3			
2			
1	TLR	2-14-2018	ADDRESSED COMMENTS BY USAC OF ENGINEERS

TOPO.	DATE	SQUAD	-
DWG.	DATE		
R/W	DATE		

SOUTH CAROLINA
DEPARTMENT OF TRANSPORTATION
COLUMBIA, S.C.

US 521 (ANDREWS BYPASS)
PLAN
DA No.: SAC-2016-01368

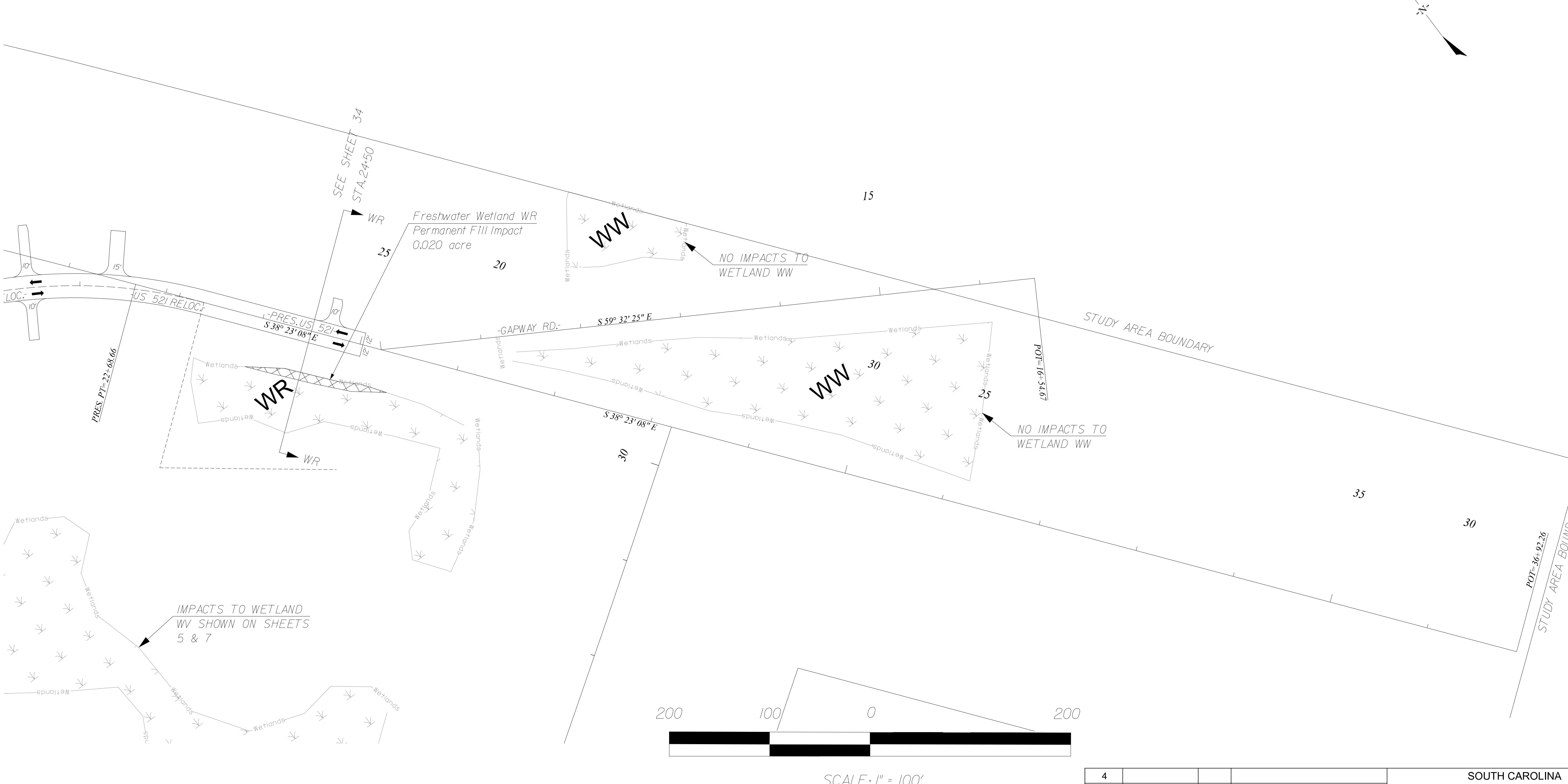
RTE. US 521 DWG. NO.

$$$$$$$$SYSTIME$$$$$$
$$$$$USERNAME$$$$$
$$$$$$$$$$$$$$$$$$$$DGN$$$$$$$$$$$$$$$$$$$$

FED. ROAD DIV. NO.	STATE	COUNTY	PROJECT ID	ROUTE NO.	SHEET NO.	TOTAL SHEETS
3	SC	GEORGETOWN / WILLIAMSBURG	0034125	US 521	33	36

PROJECT IMPACTS

Permanent Wetland Cut/Fill Impact	0.020 acre
Permanent Wetland Clearing Impact	0.000 acre
Total Wetland Impacts	0.020 acre



LEGEND

- Freshwater Wetland
- Permanent Cut/Fill Impacts
- Permanent Clearing Impacts
- Temporary Clearing Impacts

SOUTH CAROLINA CERTIFICATE OF AUTHORIZATION
CALYX ENGINEERS AND CONSULTANTS,INC.
No. C00957

CALYX
ENGINEERS + CONSULTANTS
7500 EAST INDEPENDENCE
BOULEVARD, SUITE 100
CHARLOTTE, NC 28227
phone: 704.537.7300
CALYXengineers.com

REV. NO.	BY	DATE	DESCRIPTION OF REVISION
4			
3			
2			
1	TLR	2-14-2018	ADDRESSED COMMENTS BY USAC OF ENGINEERS

TOPO.	DATE		
DWG.	DATE	SQUAD	-
R/W	DATE		

SOUTH CAROLINA
DEPARTMENT OF TRANSPORTATION
COLUMBIA, S.C.

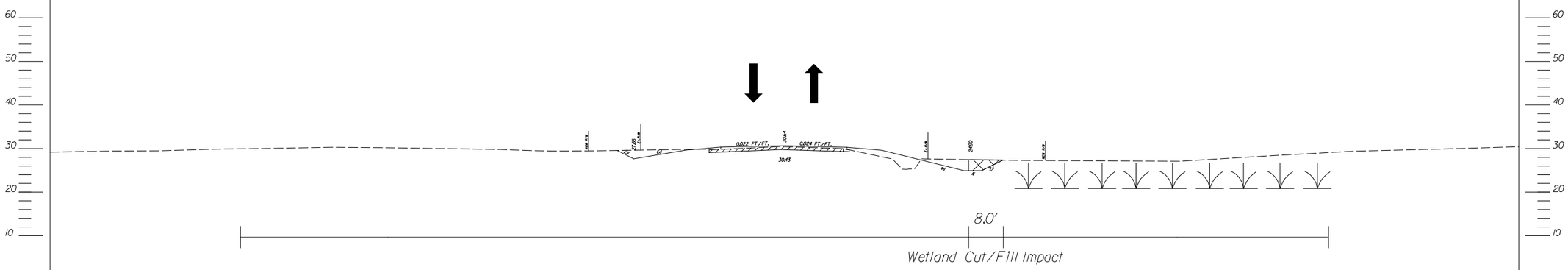
US 521 (ANDREWS BYPASS)
PLAN
DA No.: SAC-2016-01368

RTE. US 521 DWG. NO.

$$$$$$SYSTIME$$$$$
$$$$USERNAME$$$$
$$$$$$$$$$$$$$$$DGN$$$$$$$$$$$$$$$$$$$$$$$$

FED. ROAD DIV. NO.	STATE	COUNTY	PROJECT ID	ROUTE NO.	SHEET NO.	TOTAL SHEETS
3	SC	GEORGETOWN / WILLIAMSBURG	0034125	US 521	34	36

US 521 (ANDREWS BYPASS)
SECTION WR
STATION 24+50



50 25 0 50

SCALE: 1" = 25'

LEGEND

Freshwater Wetland

Permanent Cut/Fill Impacts

SOUTH CAROLINA CERTIFICATE OF AUTHORIZATION
CALYX ENGINEERS AND CONSULTANTS, INC.
No. C00957

CALYX ENGINEERS + CONSULTANTS
7500 EAST INDEPENDENCE BOULEVARD, SUITE 100
CHARLOTTE, NC 28227
phone: 704.537.7300
CALYXengineers.com

REV.NO.	BY	DATE	DESCRIPTION OF REVISION
4			
3			
2			
1	TLR	2-14-2018	ADDRESSED COMMENTS BY USAC OF ENGINEERS
TOPO.	DATE		
DWG.	DATE		SQUAD -
R/W	DATE		

SOUTH CAROLINA
DEPARTMENT OF TRANSPORTATION
COLUMBIA, S.C.

US 521 (ANDREWS BYPASS)
PLAN
DA No.: SAC-2016-01368

RTE. US 521 DWG. NO.

$$$$$$$$SYSTIME$$$$$
$$$$USERNAME$$$$$
$$$$$$$$$$$$$$$$$$$$DGN$$$$$$$$$$$$$$$$$$$$

WETLAND PERMIT IMPACT SUMMARY

			WETLAND IMPACTS					SURFACE WATER IMPACTS				
Permit Dwg Sheet No.	Station (From/To)	Wetland/Stream	Permanent Cut/Fill In Wetlands (ac)	Permanent Clearing In Wetlands (ac)	Temporary Fill in Wetlands (ac)	Temporary Clearing in Wetlands (ac)	Hand Clearing in Wetlands (ac)	Permanent SW impacts (ac)	Temp. SW impacts (ac)	Existing Channel Impacts Permanent (ft)	Existing Channel Impacts Temp. (ft)	Natural Stream Design (ft)
	-US 521 BYPASS-											
3	STA. 2642+62 RT to 2644+13 RT	WS	0.057	0.000	0.000	0.000	0.000	0.000	0.000	0	0	0
5	STA. 2678+49 RT to 2680+00 RT	WO	0.262	0.000	0.000	0.000	0.000	0.000	0.000	0	0	0
5	STA. 2680+31 LT to STA. 2683+04 RT	WO	0.700	0.000	0.000	0.000	0.000	0.00	0.000	0	0	0
5	STA. 2686+10 RT to STA. 2687+71 RT	WN	0.111	0.000	0.000	0.000	0.000	0.000	0.000	0	0	0
8	STA. 2692+12 LT to 2696+61 RT	WV	1.094	0.001	0.000	0.101	0.000	0.000	0.000	0	0	0
10	STA. 2704+03 LT to STA. 2705+38 LT	WX	0.077	0.009	0.000	0.000	0.000	0.000	0.000	0	0	0
10	STA. 2707+35 RT to STA. 2713+57 LT	WM	2.046	0.100	0.000	0.047	0.000	0.000	0.000	0	0	0
10	STA. 2713+89 LT to STA. 2714+77 LT	WK	0.029	0.010	0.000	0.000	0.000	0.000	0.000	0	0	0
10	STA. 2713+95 RT to STA. 2714+28 RT	WL	0.000	0.000	0.000	0.019	0.000	0.000	0.000	0	0	0
15	STA. 2723+88 LT to STA. 2726+94 LT	WI	0.673	0.007	0.000	0.151	0.000	0.000	0.000	0	0	0
15	STA. 2729+77 RT to STA. 2730+04 RT	WJ	0.003	0.000	0.000	0.000	0.000	0.000	0.000	0	0	0
18	STA. 2735+94 LT to STA. 2751+87 LT	WH	3.765	0.942	0.124	3.072	0.000	0.000	0.000	0	0	0

WETLAND PERMIT IMPACT SUMMARY

			WETLAND IMPACTS					SURFACE WATER IMPACTS				
Permit Dwg Sheet No.	Station (From/To)	Wetland/Stream	Permanent Cut/Fill In Wetlands (ac)	Permanent Clearing In Wetlands (ac)	Temporary Fill in Wetlands (ac)	Temporary Clearing in Wetlands (ac)	Hand Clearing in Wetlands (ac)	Permanent SW impacts (ac)	Temp. SW impacts (ac)	Existing Channel Impacts Permanent (ft)	Existing Channel Impacts Temp. (ft)	Natural Stream Design (ft)
	-US 521 BYPASS-											
18	STA. 2737+88 LT to STA. 2738+65 LT	Murray Swamp	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	0	0
22	STA. 2754+02 RT to 2755+74 LT	WG	0.413	0.000	0.000	0.000	0.000	0.000	0.000	0	0	0
24	STA. 2769+29 RT to STA. 2771+07 LT	WF	0.515	0.000	0.000	0.145	0.000	0.00	0.000	0	0	0
26	STA. 2792+09 RT to STA. 2795+60 RT	WE	0.552	0.025	0.000	0.167	0.000	0.000	0.000	0	0	0
28	STA. 2797+27 RT to 2800+48 RT	WD	0.728	0.011	0.000	0.085	0.000	0.000	0.000	0	0	0
28	STA. 2801+20 LT to 2804+92 LT	WD	0.415	0.024	0.000	0.010	0.000	0.000	0.000	0	0	0
28	STA. 2805+76 LT to STA. 2806+97 LT	WD	0.259	0.006	0.000	0.000	0.000	0.000	0.000	0	0	0
30	STA. 2806+97 RT to STA. 2814+78 LT	WB	0.426	0.054	0.000	0.000	0.000	0.000	0.000	0	0	0
30	STA. 2817+24 RT to STA. 2824+28 LT	WA	1.061	0.096	0.000	0.000	0.000	0.000	0.000	0	0	0
33	-PRES. US 521 STA. 23+95 RT to STA. 25+38 RT	WR	0.020	0.000	0.000	0.000	0.000	0.000	0.000	0	0	0
TOTALS:			13.206	1.285	0.124	3.797	0.000	0.000	0.000	0	0	0

SC DEPARTMENT OF TRANSPORTATION

US 521 (ANDREWS BYPASS) PHASE II

GEORGETOWN/WILLIAMSBURG COUNTY

PROJECT ID: 0034125

DA No.: SAC-2016-01368